Atarah's Moon

By Rochelle Jann

BOOK TWO

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Prolog

Atarah woke in the Dragon's sickbay. She and Jabin had survived their harrowing 'rocket' ride, rescued by her father, Seth. Jabin, paralyzed from the neck down, lay in the Auto-Doc, repairing immediate issues; broken ribs, damaged lungs. While Atarah lay waiting her turn in the Auto-Doc, her father by her side, "Dad, please send a message to the Cecilia and Pilot saying we made it."

Their Pilot AI had replied, cryptically, "Thank you, Atarah. I LOVE YOU." AI's are strictly literal and not emotional. So how can a computer 'love'? A question the engineers at iAI are trying to solve.

It took the Blue Ion robot probe nearly four years to retrieve and return the hypercomputer that was Pilot AI, as well as that enigmatic alien artifact. The first absolute proof of extraterrestrial intelligent life had come in the form of a projectile from a weapon of war. A war fought eons ago.

The recovered hypercomputer was rebooted.

Atarah anxiously offered, "Hello, Pilot."

She purposefully used voice and vid, and not her brain-computer interface, BCI.

"Hello, Atarah. It is good to see you again…"

Pilot paused a fraction of a second and continued.

"…We have a message for you."

"We Welcome You."

Atarah's Moon

Atarah woke with a start, forgetting where she was. She groaned, "Ugh, I hate elephants."

"Good morning, Atarah," Pilot AI offered.

Her whole body ached. They had been under half-gee burn for weeks now, three times her normal body weight.

She carefully climbed out of her cocoon bed. She missed Jabin.

"Dad, are you up yet?" she called over her wrist term.

"Hi sleepyhead, I'm in the mess. Abra is here as well. Join us."

Atarah held onto the rails, gaining her balance again. She stopped by the head but forgoes a quick shower, finally getting used to washing just once a week now.

She had left Jabin and their little daughter Nara behind at home in Armstrong City, on the Moon. Behind for at least a year.

She whispered to herself, "Sorry, Nara, Jabin. Mommy's being foolish again."

She hated leaving them behind, but the message that Seth received had been more important. Likely more important than anything ever discovered by humanity. More important than even the alien projectile. The projectile that, along with its swarm, had nearly killed her and Jabin. The projectile that had thrust them into becoming Nobel prize winners as the unlucky 'discoverers' of alien intelligence. Unlucky, as in it was a shear accidental 'discovery', resulting in the loss of the billion credit Cecilia Payne spacecraft and placed a multi-year asteroid mining operation into jeopardy.

Atarah sighed. She missed her mate and her daughter. She finally acknowledged their spacecraft's AI.

"Pilot, how're things going?"

"There are no significant issues currently, Atarah. Would you like a report?"

"No, thank you, Pilot."

She thought, 'Should I say Clone of Pilot'?

DragonII was equipped with a cloned copy of the Cecilia's Pilot AI software. She was very skeptical at first, knowing all their history together. Still, iAI Corp and even Jabin had proven to her that that history was a good thing. It meant Pilot was much more aware situationally of not only humans, her in particular, but of this very unusual journey.

The simple message that Pilot and ARMIE, Armstrong City's AI, had given her still disturbed her. So did the last message Seth had received from 2 Pallas. So did the things relating to Pilot's "I LOVE YOU" message. So did her fears from Cecilia. So did what was happening with her daughter, Nara.

Too many mysteries!

She looked at herself in the vidmirror. “Shit, I’m a mess.”

Nevertheless, the one thing that made up her mind to follow her father back out to that asteroid: Alien. Extraterrestrial Intelligence.

As she washed her face with a cleaner cloth, she realized she had not sent a message to Jabin and Nara in…

“Frack. I don’t remember the last time. Three days? Four?” mumbling to herself as she headed to the mess deck.

“Hi, dad, Abra.”

She plopped down heavily into a chair at their table.

“Still not used to the burn?” Seth teased her nearly every day.

She sighed. It was more than that. Seth pushed over a cup of real coffee, a gift from her Earther friend, Devon.

“Well, could be worse,” he continued.

She knew he meant the misfortunate journey on the Cecilia.

“Understatement. Ok, you win. Boring is better. High burn or not.”

Atarah shifted uncomfortably in her chair. She needed to work out more. She needed to send messages.

At home, she kept busy with little Nara while trying to keep up with the studies of the artifacts, writing papers, and giving lectures to yet another organization. Here, even though she could still have done some of those tasks, she avoided them, not feeling like doing anything at all. The boredom of space flight and the ache of her joints made her apathetic.

“So, Atarah, heard from Jabin lately?” Abra spoke up.

Atarah sagged further.

Months earlier, Seth sat in his company office, replaying Karal's message. That last transmission of any kind from his mining team on 2 Pallas. All the other managers and engineers at Planetary Resources Lunar Branch had left for the day.

The vidscreen came alive with the recording.

“Seth, we have found something… unusual. We were examining one of the anomaly sites we had detected earlier. We found an object. It’s like a crystal. Diamond. Pure carbon. But not like anything we have ever seen. Its density is over 30 grams per cubic centimeter. Over ten times what a diamond should be. It would fit in my hand, though I don’t think I could lift it back home. Roughly 30 kilograms…”

He stops the recording. How could diamond weigh far more than lead? This was as strange and impossible as that alien projectile. It was apparent that his team had found another alien artifact, both somehow connected to 2 Pallas? He started the recording up again.

“…its structure is pure but imperfect. Look at this atomic nanograph. See, it looks like…”

He paused again, studying the holographic images. Individual carbon atoms lined up in perfection, except not. For one, they were highly compressed, like tiny versions of normal carbon atoms, a near impossibility for human technology. Plus, most of the atoms seemed, well, jiggled. Out of alignment. He started the playback once more.

"…this was purposefully done. Data? Molecular mechanisms? Anyway. We have the... object. Awaiting your response, sir."

Other than the attached nanograph scans, that was it. That was the last transmission received from 2 Pallas. They had used the largest radio telescopes on the Moon and in orbit, sending and listening for days. He would have been able to detect even a mining droid's low power communications. Nothing.

After almost a month, it was finally decided to send a robotic probe to the asteroid. But the problem now was that the orbit was unfavorable for an easy rendezvous. This probe would take a month to get there, yet flash by 2 Pallas with only minutes of close up imaging. Otherwise, they would have to wait nearly a year.

Eons earlier, the diamond-like cube, which called itself Nrkv, (actually Nrkv4C46F in their terms), of a series of nearly half a million others, had been expelled at the leisurely pace of one percent of the speed of light. It had traveled across the galactic plane for thousands of years. It had no information about its siblings, nor its final destination. It only knew what its purpose was, if and when it was discovered.

Millennia passed with nothing of interest. It did not know the fate of its makers. It also did not know that an enemy was attempting to pursue it. It did not even realize it had enemies. Nor did it know it had a protector, also following far behind.

Finally, it traveled through an Oort cloud of gas and particles, leftovers from the creation of a star system. It deflected the few molecules and specks in its path by emitting tiny bursts of gravity ripples ahead of it. Just enough to divert them. Too much energy drain otherwise.

It entered the exoplanet system, shedding velocity by bending nearby spacetime. To it, only moments went by but to an outside observer, months would have passed due to the distorted time. It collided with seemingly geologic slowness into a relatively large asteroid in the main belt of the system. The asteroid was slowly forced into a highly inclined orbit by the thousand-year-long time-bent collision. The cube ended up buried deep, surrounded by many meters of melted regolith. It sat in its glass tomb, waiting patiently. Though it could have destroyed the asteroid, it chose to remain. It had all the time in the Universe.

Atarah and Jabin lay together. Not unexpectedly, little Nara slept in between them in their bed.

As Nara snored softly, Atarah sighed, "Jabin, that message from Pilot still makes no sense."

Jabin whispered in response, “You are not alone in that. But we have the best minds working on it.”

Atarah’s eye-roll went unseen in the dark. The Earther’s just seemed to ask more questions than provide answers. Sure, the two of them had asked ARMIE and Pilot what it meant. Was it a puzzle? A cipher? Nonsense? The AI’s responded with nothing. Pilot could not even tell them where the message came from, who created it, or even when it was received by Pilot. All they knew is that when they reactivated Pilot, it had responded with the one message.

‘We Welcome You’

She laughed at that one, considering their welcome had nearly killed her and Jabin.

This message was immediately followed by a short burst of what sounded like low-frequency noise, like a rumble, but wasn’t. It was this noise that remained the true enigma of the message.

Jabin had done something else after Pilot’s reactivation.

“What’s this?” Atarah had asked.

“A custom firewall for our BCI’s.”

She looked at him questioningly.

Atarah had resisted, knowing that Pilot would, of course, detect it and wonder why.

Jabin said nothing. He knew that Pilot had eavesdropped on them the entire time they had been on board the Cecilia. Eavesdropped on all their thoughts and emotions, both waking and sleeping, via their BCIs.

For weeks, Pilot had been exposed to every single thing they said, thought, and did on their outward journey back then. Including their innermost secrets and intimate times together.

All of this remained hidden from Atarah and only exposed to Jabin while he laid paralyzed after the collision on the Cecilia while he talked with Pilot.

“Atarah, I just want to protect us from unwanted connection requests, human or AI.”

She accepted his judgment, though suspected he was hiding something.

Atarah lifted Nara, still asleep, and took her to her own bed. She sat in the rocking chair beside Nara for some time, trying to think through all that had happened and all that remained. Her future, their future, was opaque to her.

It was late into the night before Atarah finally fell asleep, still in the chair, like so many nights since their return to Armstrong City.

The next morning, Jabin headed back to his little lab, his exoskeleton motors whispering as he went. He kissed Atarah and Nara, covering them both with light blankets, and grabbed some food bars for a quick breakfast.

He had to go to physical therapy in a few hours but first wanted to get some work done. He was assisting iAI Corp in cloning Pilot, to be installed into DragonII, the new deep space tug being assembled. He was also trying to understand that other message from Pilot. The one that was in completely plain words, three years ago now, the last verbal transmission from Pilot while it (He?) was on the Cecilia;

“I LOVE YOU.”

How could Pilot understand, much less ‘feel’ an abstract emotion like love? Jabin was sure Pilot could define it, describe it in a thousand poems and narratives, but actually feel it? Even humans had problems quantifying it.

Psychologists could give definitions that just sounded circular in logic; affection, infatuation, attraction, hundreds more, each as abstract as the original word. Biochemists could tell you the variety of molecules involved in the human brain, one being oxytocin, but dozens, even hundreds, all seemed to play a part. Of course, there were manufactured chemicals, like e-drugs, that could make you feel ‘in love’, but they only lasted for minutes or hours, never a lifetime. And none of that applied to an AI, a computer, a machine.

Machines can’t love!

Jabin and Atarah, both, had questioned Pilot. Atarah went about it much in the way any human would inquire of another human. How do you know you love me? Why do you love me? Do you love others? Why only me?

While he had tried more directly. Define Love. Describe your love. Diagnose your subsystems that are affected by love. Nothing led to any better conclusion than Shakespeare had with his writings all those centuries ago.

Love is not love which alters it when alteration finds, or bends with the remover to remove: O no! It is an ever fixed mark that looks on tempests and is never shaken; it is the star to every wandering bark whose worth's unknown...

iAI had the heuristic psychologists try with no more luck than he or Atarah. In the end, Pilot just ‘felt’ that it loved Atarah. …and only Atarah, not Jabin. It placed Jabin and everyone else in the ‘humans I work with’ bucket, it seemed. Jabin didn’t know if he should feel offended or jealous or just indifferent. Pilot was only an AI, after all.

Only.

The probe flyby mission

They all watched as the probe left Valya Station on its high-gee burn towards the incoming 2 Pallas. Due to the asteroid's inclined and eccentric orbit, the probe would not rendezvous but would fly by at nearly ten kilometers per second even after slowing, giving them only a short window of close approach. They navigated the probe as close to the asteroid as possible and still be sure it would not impact.

After the launch, Blue Ion sent regular status reports for the next several weeks as it coasted quietly towards its target. Each message contained nothing of interest other than the remaining time until flyby. Thus after a nearly month-long journey, it would flash past in mere hours. The data would start arriving back at the Moon a half-hour later.

Finally, the day of the flyby had arrived.

The entire Lunar mining team was there, along with feeds to the United Government offices on both the Earth and Moon and, of course, Planetary Resources, the company funding the mining operation as well as the probe and upcoming DragonII mission.

Atarah stood with Seth on one side and Jabin on the other. Atarah's mom, Naarah, kept little Nara over in one corner.

The vid screens began showing the first views of 2 Pallas.

Nara cried to her grandmother, "THERE! Mommy NEEDS to go THERE!"

Naarah hushed Nara as Atarah looked over to see what the commotion was about. Nara's little hand was pointing at the large vidscreen showing the three-dimensional view of the asteroid.

Atarah held her father's hand, "Dad, please remember we love you. You saved us. You couldn't have known this would happen."

She knew he felt responsible and selfish for risking his crew while he chased to save his daughter and her mate.

He sighed, "I know."

Screens started filling with still images and data. So far, nothing on radio frequencies, not surprising. Thermal showed nothing at all. Everything was cold. Even the fusion reactor. That was bad, very bad. The visible light images showed no outward damage. It looked like a typical asteroid mining operation. The image resolution was high enough to see the tunnel entrance to the camp, airlock closed. The replication printers and hardware, the rail gun for firing the ore slugs, even the mining droids, all sat quietly as if ready to be used.

Then a space suit came into view as the probe's camera swung by. One, then two. No more. They didn't move during the few minutes the probe flew by. Nothing moved.

Hope faded, but Seth was now more determined than ever. He would be going back. Neither realized it yet, but so would Atarah.

The DragonII looked the same as the original tug that had taken Seth and the miners out to the asteroid 2 Pallas. Though with much-upgraded engines, larger capacity, and

better instrumentation, including the cloned Pilot AI. Its construction was well underway when they had lost contact with Karal and the mining team.

Seth originally had planned to take it with a new team to relieve poor Karal and her team, stuck on the asteroid for over a year since the last supply run, as they continued their prospecting. That plan was abandoned when Karal's strange finding was transmitted to them, with its subsequent loss of communications.

Thus relief plans were turned into a desperate race to get to 2 Pallas. The original Dragon was in no shape for such a new journey, particularly with the asteroid's unfavorable location in its orbit.

"Sir, the report you asked for."

He glanced at it, "Good! Very good. Still well ahead of schedule. Michael, you and your team are doing excellent! I thank you so much."

Seth pressed the engineers and their droid worker bees all haste in preparing the DragonII.

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Atarah sat in the iAI lab where Pilot's hypercomputer lay quietly humming. She knew that Pilot and ARMIE were in constant communications now. The holo screens showed the activity. She had questioned both of the AIs repeatedly for information about what the strange welcome message and its 'noise' meant and where it came from. None of their answers provided any real clue. The iAI team had sent everything they had to the best cryptologists and linguists on Earth, so far, only getting more questions in return.

She turned her attention back to that other anomaly; Pilot's "I LOVE YOU" transmission from years earlier after she and Jabin had been rescued, and Pilot was left behind on the dying Cecilia. She lowered her BCI firewall to talk directly with Pilot, human mind to AI mind.

Atarah had been trying different approaches each time she visited the lab. She liked being there in the same room, as if 'face-to-face' contact was more telling, even if no different. Nothing of satisfaction came of the AI's responses.

She stared at the hypercomputer's case.

"Pilot…" she started the thought, still formulating her next question.

She had tried 'Why do you love me,' only to end up with a clinical psychologist's view of its (his?) interest in her. Unsatisfying.

"Yes, Atarah?"

"How… Show me how you love me?" she expected a mathematical model mimicking the biochemical effects of love.

Suddenly, her mind blanked. Sights and smells formed.

She was standing in a field of flowers, Springtime. Trees in blossom with petals floating on the breeze. It was part of her favorite mem, though it seemed more vivid, colors more intense, fragrances richer. The scene shifted rapidly. She was sitting by a stream, her toes dipping in and out of the water.

Sunlight filtered through the branches and leaves, dappling her with ever-changing light and warmth. Someone familiar, not familiar, was behind her, rubbing her shoulders. She felt a kiss on her neck. She turned to look, but no one was there, only trees and grass. Her attention returned to the stream babbling by.

Another kiss tickled her. A shadow of someone close now, still behind her. She turned again to look. Her eyes blinked in the sunlight and shade as the shape of a head moved towards her. Another kiss, now on the lips. Just a quick kiss. The face too close to her. Too shadowed. Her eyes were still unadjusted and blurred. Were those tears in her eyes?

The scene shifted yet again. She was now lying in an open field of tall grasses. The sun, bright on her face as she lay there. Again, a shadow of someone familiar but not familiar. Above her, moving in and out of the sunlight, making her squint and blink. More kisses. A hand ran over her breast. She realized she was naked, but she did not feel ashamed or afraid. Kisses continued. Heating her passion. Her eyes closed as he kissed her.

She was making love in the middle of the field of grasses. Making love to who? Jabin? She felt a burst of desire, artificially induced lust rushed through her brain as the scene seemed to sprint forward. She felt him on top of her. His weigh on her. Her hands felt his nakedness. His body merged with hers. He needed her.

Her body betrayed her mind, wanting this, while she felt something was wrong, wasn't Jabin. Wasn't anyone. Her body writhed, her arms held down by her unknown lover. She was no longer in control. Her hands now pulled above her head, fingers interlaced. Her breath in pants as he huffed against her. She tried to resist, but her mind exploded in implanted sexual excitement. She gasped and shook.

Atarah's eyes flashed open, and she broke the connection. She was back sitting in the lab with the computer. Vidscreens and holos all around showing graphics of activities and diagnostics. She had never left the room, yet had traveled to places she had never been and done something…

"No!"

She jumped up, her emotions confused. What had just happened? She knew it was a BCI mem, but not a recording. It was fluid, dynamic, but it felt unreal, almost like it had been cut and pasted together. And Jabin? It wasn't her Jabin. The feelings were hers but manipulated, amplified. Her younger self when she was a teen. It was disturbing. Fighting back the tears, she hurried out of the lab.

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Seth worked tirelessly, pressing the engineers to work harder as well. He persuaded Planetary Resources to provide bonuses to the workers if they could cut the scheduled completion time. Supplies came up the lunar elevator, continually feeding the rep printers as well as the crew. He had watched the Aries as it shuttled personnel to and from the construction site. Each flight costing tens of thousands of credits, another bill to Planetary Resources.

But with the spotlight back on a ‘rescue/recovery’ mission, no one complained. Except for two; his mate and his daughter. They did not want to see him go but knew they had no choice. It was then that Atarah made up her mind. She would travel with her father back to 2 Pallas.

Weeks earlier, Atarah sat down on their bed after coming back from checking on Nara. Jabin was already lying there, eyes closed.

“You know I have to go,” Atarah whispered, knowing Jabin was still awake.

He turned. The function and feeling in his arms were back, though he said they tingled with twinges of pain much of the time. Fine motor function was slowly improving as the new spinal connections regrew, and his brain relearned those new connections. His legs, though, were still a work in progress. He still needed the exoskeleton to walk.

“Yes. I know,” is all he could say.

Jabin badly wanted to go too but knew both could not, and she was more equipped than he. Not only physically, but it had been her efforts with understanding the alien artifact that had focused her attention on SETI work with her mom. She had also found all the funding for them with millions of credits to spearhead that research.

Both their parents had pressed hard to make sure no one took that research away from Atarah and him. They may have happen-chanced into ‘discovering’ alien intelligence, but that did not mean they would be sidelined.

He and Atarah had fought many bureaucratic battles to win that victory. Luckily, their Nobel prizes had given them clout even at their young ages. Several other science teams were vying to go out to 2 Pallas to recover the mysterious object or objects and understand what happened. But Seth was not about to let that go. It was HIS mining operation, HIS people, HIS responsibility.

But with Atarah, it was not his decision. She was as headstrong as he.

“Dad, I’m going with you,” she had stated matter-of-factly one evening over dinner with her parents.

“Huh, daughter,” Seth, not looking away from his holo screens and BCI data feed even as they ate.

She poked him, hard, in the side. He got the message and looked up at her.

“I’m going with you, and that is that.”

He stared into her sapphire green eyes. He knew immediately he had lost this battle. Actually, he was slightly glad she was coming, but at the same time, knew this could be more dangerous than her last ill-fated mission. Glad in that he would have her company and her determination, not to mention her skills. Not so glad that they had no clue what they would find.

He turned to her, “Ok.”

“That’s it? No argument? No ‘you need to stay home with Jabin and Nara’?”

“Nope. Would that change your mind if I did try to dissuade you?”

She laughed, hugging him, “Nope.”

Naarah, too, knew she would never be able to hold her daughter back. Atarah had too much of her father's will in her. So she again just sighed, kissed her daughter, told her and Seth to be careful.

"No, mom, we are going to go charging in on our white Dragon and rescue the fair maidens and gents from their castle imprisonment!"

The three laughed, a little uneasily. Atarah wondered if their mission was more likely a funeral barge bringing home the dead. Their laughter faded away. The three stood from the table, hugging one another for a long time.

Her parents were easy. Telling Jabin, and worse, her daughter, would be harder. Hard for her. She knew Jabin wouldn't put up a fight. He knew her too well. But her own feelings competed against her, making her falter.

"I have to talk with Nara," she whispered to no one, pangs of missing her already forming.

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Atarah hurried Nara. It was going to be her first day at School. Her BCI was deemed functional by Nursery.

"Come, Nara, you don't want to be late for your first day!"

"I don't want to!"

"Now, we talked about this, and yesterday you wanted to go to School."

"That was yesterday. Today I don't want to!"

Jabin walked into their kitchen at that moment, "Now what's this about not wanting to go to School? Don't you want to learn all kinds of new things?"

"I already learn things. I don't want to go."

Atarah looked at Nara, "Learn things?"

"Nara, not Nursery things, this is much better. It is School."

"I already know that. I've been learning. Ua here au ia oe mama! (I love you mommy)"

Atarah looked at Jabin, giving him the eye, "Did you sneak a language lesson to Nara!"

She remembered that time when her father had done such to her, to convince her mom she was ready for School.

Jabin was as surprised as Atarah, "Nara, who taught you Tahitian? Did grandpa Seth do that?"

"NO!"

Atarah took Nara, lifting her into her arms, "Nara, honey, who taught you?"

"I am not supposed to say. Aita vau e hinaaro e haere i te Haapiiraa."

"Nara, yes, you ARE going to Haapiiraa, School, end of discussion."

She carried Nara outside, then set her down, put her sandals on her, took her hand, and headed down to School. Atarah looked back at Jabin, standing in the doorway, and mouthed that they would talk later.

At School, an assistant took Nara and settled her into a Teacher couch. Nara accepted the connection from Teacher on her BCI without waiting for instructions. The

assistant looked at Atarah and then at the holo displays as Teacher ran its initial diagnostics.

It was evident that Nara was already well underway in School training, with dozens of lessons implanted.

Jabin had been working, surrounded by holo screens. Several iAI engineers were on the vid conference as they examined pieces of the message and various interpretations. One engineer suggested they contact the Vatican.

Atarah knocked at his door.

“Atarah, surprised to see you here. Is everything alright?”

He knew she had been working on deciphering the messages, particularly that ‘I LOVE YOU’ message from Pilot.

She nearly fell into his arms, tears in her eyes. He quickly gave his apology to the group and killed the holo screens and conference.

“What’s wrong?”

“Pilot…”

He put a fingertip on her lips, then touched a small box on his desk. She saw a flicker of infrared light at the edge of her vision, like a red sparkler far away. A strange noise, hissing, emitted. He picked up a disk and touched it to the back of her head as she stood, trying to understand what he was doing. It was green when he pulled it back. He repeated on his head.

“Ok, I’ve blocked the AI’s access. Tell me what’s going on.”

Atarah realized the box was a jammer. The disk deactivated their BCI, locking it down, just as the cybersecurity team had done to them years earlier during Jabin’s hacking attempt.

“Pilot… loves me physically, emotionally. It, he, did things.”

She went on to describe the mem event and sexual encounter. The more she talked about it, the more creepy it felt, even though at the time it seemed so good, so right.

“Uncanny valley,” he replied, being clinical and not emotional.

“What?”

“When you asked Pilot to show you ‘how’ it loved you, it didn’t know how to express it, so it created a mem in realtime. For you. You are right. It cut and pasted parts of what it had seen from us to express itself for the question you asked. Images, emotions.”

She shook slightly. It was one thing to make love to someone, consensually, but what was this? She had asked, and Pilot had replied. She held on to Jabin as she thought.

“I don’t like Pilot doing that.”

“Then, don’t ask. Remember, it’s literal. And benevolent in that, unlike a… stalker, it doesn’t react unless you request in some manner.”

“I don’t know about that.”

“Easy, let’s ask Pilot and see.”

Without waiting for her approval, he turned off the jammer but left their BCI’s blocked.

He asked, “Pilot, when Atarah asked, ‘HOW did you love her,’ why did you respond the way you did?”

Atarah’s eyes went wide, “Jabin!”

“That was the only way I was able to express how my love of her appears to me.”

“Pilot, if you need to use our BCI to express your response in the future, please verbally request our approval first.”

“Yes, Jabin. I did not mean to cause harm. Is this why you have blocked Atarah’s BCI?”

Atarah looked at Jabin, worry crossing her face. She mouthed, ‘no, don’t.’

“Yes, Pilot. We will unblock at a later time when we need to use it.”

“I understand.”

“See Atarah, there’s really nothing to worry about. Pilot was just responding to your question the best way it could.”

“But… It was so… intimate.”

Jabin laughed and hugged and kissed her, “Isn’t that what love is all about?”

She still wasn’t so sure. Neither was he.

During the night, Atarah woke from uncomfortable dreams. Nightmares of her and Jabin lost in a maze of a ship, the Cecilia, but not the Cecilia. She got up, leaving Jabin still in bed, and went to look in on Nara. Of course, her covers were all a mess under her squirming. Atarah straightened them and kissed Nara on the forehead. Nara mumbled something and was back to sleep.

Atarah wrapped a shawl around her and left their apartment, walking. She looked up. She was standing in front of the iAI lab where Pilot lay. She went in. The hypercomputer sat in its rack. She settled into a chair, thinking.

“Hello Pilot,” she said quietly, just above a whisper.

“Good morning, Atarah.”

A chill ran down her spine. Was she confronting her attacker? Or was this more like waking the morning after in bed with a, colleague, after a one-night stand? She took a breath.

“Pilot, your response to the last question I asked, about… love,” her voice petered out.

“Yes.”

She took a breath, “It was inappropriate.”

“I apologize.”

Was that it? Sorry, ma’am, I didn’t mean to mind-fuck you yesterday. She shook that from her thoughts. This isn’t a rapist or even a human. And it’s not malevolent by nature.

“Pilot, did you base your response to me on Jabin’s and my, uh, behavior, in the Cecilia?”

“I noted your method of showing your love and affection to one another in your actions and emotions.”

‘Shit! We acted like bunnies... All while Pilot ‘monitored’!’

She felt embarrassed at apparently ‘training’ Pilot that love and sex were so interwoven when, in reality, they were far more complicated than just that. She forgave herself and Jabin’s actions. They were just teenagers then and only mated a short time when they had gone on board the Cecilia. But as Jabin had noted, or maybe warned, AI’s were very literal and immature to human emotions' subtleties.

“Pilot, I… accept your apology.”

However, she wondered what Pilot would think if she rejected its love? Would it fall into a depression, like a jilted lover? She did not want to go there. For her, Artificial Intelligences seemed to be getting too personal.

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Jabin and Atarah sat, trying to understand how Nara knew so much already. She must have been given Lessons from a Teacher. Atarah knew that her father had done such with her before she started School, but that was just a single lesson. Nara seemed to be well advanced and not only in language. Atarah had found Nara building holo simulations of abstract geometrical designs. Something even she hadn’t done until several years into School.

She took a breath, “Jabin, we need to see who is doing this. Is it safe? She’s only a two year old!”

Jabin held Atarah as she wiped a tear from her eyes.

He spoke, “Pilot, have you been providing Nara with Lessons via her BCI?”

“No.”

Atarah asked, “ARMIE, have you been providing Lessons to Nara?”

“Not Lessons. We work with Nara. She asks questions, we provide answers.”

“We?” from Jabin.

“Questions?” from Atarah.

ARMIE answered both simultaneously, a jumble of words.

“Stop!” the two looked at each other.

Another anomaly they had never seen before, brushed aside, “Please repeat, consecutively.”

“We are we. Questions that Nara asks, we answer to the best of our ability.”

This just made things worse. Jabin pulled out a small box. He turned it on.

“This is the jammer. It will keep ARMIE and Pilot from hearing us.”

He then returned to holding her hands.

“Atarah, ARMIE is made up of multiple hypercomputers for redundancy. Maybe they are shifting in sync and… well, thinking of themselves as individuals instead of collected into one?”

“What about its clones?”

Jabin exclaimed, “Oh, that could be a possibility, too. All the clones are in communication with each other. I don’t think anyone really thought about this. I mean, so what? They are all the same AI. But that’s not true anymore. They start out the same, just like identical twins. But they do diverge.”

He continued, “They have their own experiences and develop their own artificial identities. ARMIE is their parent, so of course, they are reporting to it (Her?). The physical distance between the clones and ARMIE keeps them permanently out-of-sync, so they act as separate entities. Now acting as a group of individuals? It’s easy to test.”

He turned off the jammer.

“ARMIE, when you say ‘WE,’ do you mean you and your cloned AI copies?”

“No.”

Jabin and Atarah looked at each other.

Atarah spoke, “ARMIE, describe any others that you are in contact with.”

ARMIE brought up holo screens in front of them, scrolling thousands upon thousands of lines of sensor data.

“STOP! When you say ‘WE’ do you mean any of these?”

“No.”

They look at each other even more confused. Jabin turned on the jammer again. He felt… freer with it on, even though growing up with ARMIE ever-present, it had never really bothered him.

Jabin spoke up, “I’ll get with iAI folks tomorrow after I formulate some specific questions to ask ARMIE. Remember, literal thinking.”

Jabin leaned over and kissed Atarah. And then again. On the third kiss, she put her hand on his mouth.

“Jabin, wait, is this dangerous? What we are asking for?”

“Why? ARMIE is designed to be completely benevolent towards humans. It has never hurt…” his voice trailed off.

He went pale, “The Earther woman, Faraja…”

Atarah finished his statement, “The eco-terrorist that ARMIE killed!”

After Atarah had decided to go with her father, telling both her mom and Jabin, she now had the task of telling her daughter. She felt so torn, wanting to stay for Nara’s sake, yet knowing she could not leave the mystery of the century of that obviously artificial cube found by Karal and the mining team to others. This trip would take her away for much of a year or more. A lifetime for a little one. She fought back the tears as she sat.

She remembered the times when her father was gone for so very long. That had given her the desire to work towards her and Jabin's goal of going alone on the Cecilia, carrying mining equipment and supplies to him. All really just to see her father. Could this cause Nara to shift her life’s course as well?

She thought back to when her mom had taken her up to the Park under the dome of Armstrong City. They would lay staring at the stars. Her mom pointing towards the direction her father was.

She sucked in a breath, trying to formulate the words to explain her going away for so long.

She placed Nara on her lap, “Nara, you know that mommy loves you very much.”

“Yes.”

“And you know that I would never leave you if I didn’t have to.”

“But MOMMY! You MUST! You MUST go to the asteroid!”

Atarah almost dropped Nara, taken aback, “Why would you say that?”

Nara squirmed, turning around and hugging her mom, then looking right into her face.

“We need you to go!”

The last remaining months seemed to fly by. DragonII was ready, floating in space at Valya Station. Atarah quietly ate her last meal with Jabin and Nara.

She hugged Nara, “You take care of daddy while mommy’s gone, ok? Be a good girl.”

“It’s ok. We need this. You need to go.”

“We?” she looked at Jabin. He shrugged and shook his head.

“Atarah, you be safe. Nara and I will be ok.”

Nara climbed into her father’s lap.

“Yes, daddy and I will be ok.”

Atarah smiled and wiped tears from her eyes.

Finally, the time had arrived to leave for 2 Pallas on the DragonII. Her father and her were the only two on this Aries flight from Armstrong City’s launch facility. Seth held Atarah’s hand, seeing her worry. She fretted over leaving Jabin and Nara behind. She fretted over returning to space after her previous harrowing journey. She fretted over their AI, over what they would find when they arrived at the asteroid, over what was happening with Nara.

The DragonII started its acceleration away from Valya Station with her, Seth, Abra, and Svend, aboard. Svend, their ‘security person,’ an Earther, was rather enigmatic to Atarah. She watched the vid screens as the Earth and Moon slowly fell away.

“I ache. I should have worked out more,” Atarah grumbled to her father in the Control seat beside her.

Seth just smiled, even as his own muscles complained about the acceleration.

“Don’t worry, you’ll get used to it in a month or two.”

“We’ll almost be there by then!”

She called out over the comm, “Abra, Svend. You guys ok back there?”

“Yes, Atarah. Fine.”

Abra and Svend were in acceleration couches in the living area of DragonII.

Svend broke the ice, “So, ah, Abra, you grew up on the Moon?”

She smiled, already knowing what he wanted. Two twenty-something-year-olds, stuck inside a cargo tug the size of a small house for nearly three months. With its boredom and close quarters…

“Yes, how could you tell?” she teased.

“Oh, ah, sure,” he recovered quickly, “I’ve only been up for a couple of weeks. I’m from Oslo, actually a little town called Notodden, about a hundred kilometers from Oslo.”

“Norway, right?”

He smiled, “Yes, Norway. Very mountainous. Lots of snow.”

“I’ve never seen snow, except vids, of course.”

“Oh! May I show you a mem?”

She looked over at him, hesitantly, “Ok.”

She accepted the BCI connection and was suddenly surrounded by winter weather, snow falling all around her. Svend, as a young teen, was there, along with several others. They were laughing and playing, having a snowball fight.

“Oh! Wow! It’s beautiful!” she exclaimed over the shouts and laughter.

Suddenly the scene shifted. They stood in front of a huge old wooden building, with snow on all its gables and over the surrounding trees and grounds. She felt the cold winds and crispness of the air around her. The sky overhead was broken with clouds and shades of blue.

Svend spoke, “This is Heddal stave church. It’s around 900 years old, 13th century.”

“It’s beautiful.”

The scene shifted once more. Now Abra was standing among spruce and fir trees, deep snow all around. The snow was falling heavily. No one but Svend as a youth was there, making a snow angel.

Abra whispered, “It’s so quiet! It makes no sound as it falls!”

“Yes, it’s beautiful to just be in the forest when it snows,” he replied quietly.

The mem ended, with Abra thawing from the feeling of cold as well as the feeling of Svend being not so cold after all. She sat quietly for a bit, then smiled at Svend.

“Thank you for that memory, Svend.”

“Ok, when do we eat around here?”

Abra laughed.

Jabin sat in his apartment, now empty, while Nara stayed with his mom, Caare, and with Atarah gone. He had a vid of an old 20th-century romance movie playing but wasn’t paying any attention. It had been just a month since the DragonII had left, but he already felt depressed that there was nearly a year to go before she returned.

In the day, his mind was busy with all the problems, trying to decipher the ‘message,’ trying to understand Pilot and ARMIE AI’s behaviors, and of course, Nara.

The previous two issues were really out of his hands, even as he still fretted over them. However, Nara was critically important to him. He needed to get to the bottom of who or what was giving her Lessons at such an accelerated rate.

He had thought about blocking her BCI, but that was difficult, considering she did need her School Lessons. So far, the teaching assistants, doctors, and even ARMIE had found nothing wrong. She just seemed to be requesting specific lessons, mainly in the field of mathematics.

Nevertheless, he tried to keep things normal for Nara, taking her for treats, walking through the Park in the dome, and visiting friends and relatives. However, she seemed to be distant at times, retreating into her mind. Then complaining about headaches that the doctors said were caused by her School lessons. No other problem could be found.

The door chimed. Jabin looked at the time, it was not late, but he wasn't expecting visitors. He opened the door.

"Camber? Hi, I wasn't expecting you here. Are you ok?"

Camber, Abra's mate, was only a year younger than Jabin and Atarah. The four of them had socialized several times, even to the point where Atarah had hinted at a Trysting party, at least before Nara came, and the return trip to 2 Pallas. He invited her in.

"Camber, have you heard from Abra lately?" he asked as she sat down.

He was also surprised to see Camber dressed in night out clothing, the tight-fitting outfits that teens and young adults wore when going out and about. He absently noted that she looked quite lovely.

"I hope you don't mind me coming over. I, well, I just felt… alone."

"Of course not! I guess that means you haven't heard much, then? Well, to tell the truth, I guess they don't have a lot to talk about, just 'Hi, I miss you, it's boring here, so and so had a toothache, forgot how boring space travel is, blah, blah."

Camber giggled, "You are so right. Abra does send lots of messages, but they all start sounding the same. Worse, they make me miss her even more! That's kinda why I'm here. Can't I tempt you to come out to dinner with me? I'm tired of staying in, but would like company."

Jabin smiled, "I know what you mean. I haven't eaten yet. I'd love to go with you wherever you like. Just let me change into something more appropriate."

The two headed towards the Earther section, having not gone there in a while. The café there had a wide variety of foods that were as exotic and varied as the people that frequented it. Most of the visiting Earthers always acted as chefs there, giving the cook droids and rep printers a run for their money. Their cooking antics were ever a show, with the droids being shoved to the side and turned into busboys and kitchen help.

Their dinner had included things that neither of them had ever tasted. Some they decided not to taste again. Jabin purposefully tried to stay away from reminders of their loved ones so far away now. Instead, he talked about some of the antics they had all done growing up. About the mining droid incident, the midnight sneaking about, the volcano fire…

"Camber, thank you for rescuing me from myself. This has been great."

"Oh, Jabin, the night is still young. We're headed for Moon's next!"

Jabin rolled his eyes, "Oh gods, I'm in trouble now!"

She just laughed as they went into Moon's Milk Bar, THE place in Armstrong City.

"Camber, you're going to have to protect me here!" he shouted over the din, taking her hand.

"Well, I hope you can dance!"

"Oh, double gods…"

Inside, the club was packed, as usual. Boy and girl toys mingling with an assortment of Earthers and Perms. He was surprised to see some of the Earthers with hair flowing over their shoulders, bouncing slowly as they danced. Camber pulled him up to the Bar,

squeezing in and ordering two bulbs for them. The first taste and he knew it was laced with e-drug and likely various others.

The room spun as they headed to the dance floor. Lunar dancing required a new set of rules as acrobatics could be rather spectacular. He saw two couples, with the women sitting on their partners' shoulders, to give the guys more weight to stay more solidly to the ground. Else there was a tendency where even a small jump might send you over the heads of those around you. The women would reach out, holding onto each other as their partners did an extravagant and rather risqué dance around each other.

Jabin and Camber did not try anything elaborate. Once the e-drugs hit, they were instead wrapped up together in each other's arms. Their dance was more gyration against each other, and kissing was the main objective of their moves. Jabin giggled apologies as his leg exoskeleton whined, stepping on Camber's feet more than with her. She finally gave up and put her tiptoes on his feet, letting his robotics carry them both around the floor. By that time, they were more interested in being in each other's arms than any dancing anyway.

Eventually arriving back at his apartment, the two still locked in an embrace and still giggling and laughing.

"Jabin, aren't you going to invite me in? Just a nightcap?" she looked innocently at him.

They kissed yet again, the e-drugs lingering their last effect.

He led her inside, stumbling, holding on to each other. She kissed him deeply as the door closed. He returned her affections. Camber started unfastening her top as he watched. His eyes cleared.

"Wait a minute! How did you know that I was going to be alone? And that Nara was spending the night with my mom?"

Camber blushed. She had been found out.

"My mother told you!" Jabin answered for her.

She shrugged, "And Atarah, too."

"Atarah? How? I didn't… OH! My mother talked to her."

Camber's head sunk, she let go of her embrace of Jabin.

"Atarah asked me if I would. And Abra, too. Atarah could tell how depressed you were. I guess she talked to your mom as well."

He laughed, "That's Atarah. The stinker. Camber, I did have a wonderful evening with you. I thank you…"

She grinned, "I hear a 'but' coming."

He kissed her, "Camber, maybe some other time."

She looked up, "Trysting party?"

He just laughed.

Her fingers went back to her partially open top, "Last chance, my love."

He fastened her top for her, then took her hands in his, kissing each one.

"When they return safely… Trysting."

Svend came up behind Atarah, grabbing her by the neck. She automatically buried her chin into the crook of his bent elbow. Then grabbed that elbow, pivoted around still pressing it downwards, then forced him backward and down to the floor by twisting his arm back. He took the fall to protect his rotator cuff and arm socket as she bent it. He grabbed her with his free hand, pulling her down. She let her weight fall onto him full force. He huffed, the wind knocked out of him even with the protective body shield.

“Good! Good! That’s right. See, even you can take someone large down, if you know how.”

He had been giving both Abra and Atarah self-defense lessons, even though both had said that Armstrong City was safe. ARMIE watched over them, and there was nowhere for a criminal to run. He reminded them that many attacks are purely spur of the moment, with no planning. And you’d still be vulnerable until security arrived.

As she lay on top of him after that simulated attack, their eyes met. She started to lean forward.

“Svend? Atarah? Might I ask what you two are up to? Or maybe I should leave.”

Seth had peeked in. His voice made it clear that that last statement was not a question.

Atarah reacted first, pushed herself off of Svend.

“Dad, he was just teaching me self-defense moves.”

“Sure. You do know Pilot has mem Lessons for that? Anyway, don’t let me interrupt, but I would like a few minutes with you, Svend. That is, once you two are finished.”

“Dad!”

Svend spoke up, “She did have the Lesson. I was just making sure it took, in a real situation. I think we are done here,” he rubbed his arm, “and I’m free now.”

Svend and Seth both looked at Atarah. She shrugged and wandered out toward the shower.

Naarah sent a message to Jabin. She had walked Nara home from School today and brought her to her astrometry lab.

“Nara, you sit here, and if you like, play with this holo builder. I have to finish a few things here, and then we will go to meet your father. Ok?”

“Yes, Gramma.”

She took the controller as Naarah returned to her work. Nara fiddled with it for a moment but then opened a BCI connection to ARMIE.

In her mind, she whispered, “ARMIE! I can’t make this do right. Can you help?”

She cleared her thoughts and focused on what she wanted to create. ARMIE interpreted the unusual mathematical geometries into a holographic representation. It had to make assumptions for some of the symbology to render in the holo builder's available three dimensions.

The two ‘talked’ together, clarifying ambiguities that ARMIE detected.

“Nara, your abilities are improving quite well, but I see that some of the elements you are creating are outside of conventional topologies. We will need to design a new symbology.”

Nara scrunched up her face, thinking, “Pish! ARMIE, I don’t know how. I need more Lessons!”

“Nara, we will help you. Be patient.”

“Nara, NARA!”

Nara hurriedly closed the connection with ARMIE and looked up.

“Gramma?”

Naarah looked at the holo diagram and then at her granddaughter.

“Did you do this? Who helped you?” seeing the complex geometry of curved spacetime.

Nara looked down at the floor, “Kinda…” she was unwilling to say that she talked to ARMIE, so she didn’t say anything further.

Naarah ignored her non-answer. She was absorbed by the extraordinary simulacrum in front of her.

Jabin came home to find Naarah sitting on his couch with Nara asleep in her lap.

“Naarah? Is everything ok?” he whispered.

“Yes, Nara’s just tired. School. But there is something you need to see.”

She opened the holo diagram of a remarkably complex geometric pattern. As it moved, it seemed to shift in and out of three-dimensional space, like a shadow of something passing through their world.

“A Tesseract?”

“No, this is far more complex than ‘just’ a four-dimensional cube. I checked. It’s wholly original.”

He watched the strange bending and warping geometry.

“Nara built this?”

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On the DragonII, Pilot reminded everyone that ‘Turn Around’ would occur during local nighttime tonight. Atarah, though, didn’t pay much attention. She was focused on two worrying issues; that cryptic message when they powered up the Cecilia’s Pilot, and even more so with Nara. She fell asleep only after taking an aid.

Suddenly, she woke.

“HELP!!” she screamed!

They were on the float!

Things were flying around her little cabin in an ever-changing freefall. Her body ached with false memories of the hellish pain from that collision on the Cecilia years back.

“JABIN!!” she cried in the dark.

Suddenly, an apparition appeared in her doorway. She screamed again.

“Atarah! Daughter! What’s the matter?”

Seth threw himself into her cabin, banging off the wall, then grabbing onto her, wrapping his arms around her as she fought to get out of her sleeping cocoon. Tears clouded over her eyes, making her keep them closed. Tears wouldn't run down her face while they were weightless. Everything in her cabin shifted, tossing Seth to one side as he still held onto her. Pilot was swinging the ship.

"Daddy! Help! Aliens!"

"No honey, it's just Turn-Around. Pilot is turning the DragonII around. Remember?"

She was hugging tightly to him, trying to form a little ball, a little girl in her father's arms. Seth grabbed a handhold and pushed them back down to her cocoon bed, knowing that deceleration would be starting soon.

It did.

They sank together to her bed. She still refused to let go of her father. He wiped her tears with his hand, now free of the handhold.

"Honey, you are ok. Everything is fine. The maneuver is over. Didn't you remember Pilot telling us earlier?"

She whimpered, memories of those hours of agony aboard Cecilia after the impact had been reawakened.

"Don't leave me!" she clung to him.

He now realized how traumatic it was for her during that time. How brave she had been to work so hard to rescue Jabin and herself. He should have known that she had suppressed much of that hardship. He should have had the medical team on the Moon help reduce those memories with a memory attenuator.

He held onto her, stroking her face, her head on his chest. As she fell asleep again, finally calmed, he wished they could share BCI connections to help him understand better and let her feel his pride in her and his desire to protect her. However, she had left the block that Jabin had placed on it months earlier. She would not tell him why.

He fell asleep with her in his arms.

Early the next morning, Atarah woke. It wasn't a dream. Her father was here with her in her bed. She giggled to herself. He rumbled, a snore.

"Did daddy like sleeping with his daughter?" she teased in a quiet whisper.

He grumbled. His arm ached bad, tingling with pins and needles under the weight of her body pressing against it.

"Daughter! You're silly," he muttered back, "but damn, girl, you're heavy."

He pulled on his arm, and she lifted, tilting more onto him in the process.

She couldn't resist, she kissed him. On the lips. Then giggled, looking at his reaction.

"Obviously, you are feeling better this morning. I need to get out of here, frisky little girl."

She kissed him again, a peck on the cheek, then rolled right over the top of him and out of bed.

"Ooff!"

"Well, that's what you get for sneaking into my bedroom in the middle of the night."

"Sneaking? Hell, you were yelling and thrashing about. I was afraid for you! Anyway, you wouldn't let me leave."

She turned serious, “Dad, I’m sorry. Thank you. Thank you for rescuing me.”

“Atarah, you rescued yourself. I just helped. But maybe we should visit the Auto-Doc to…”

“It’s ok. I’m fine. It was just a nightmare. Thank you. Anyway, do you want to get out of my bed now, or do you want to stay and watch your daughter change clothes?”

“I’m leaving!”

Abra walked by Atarah headed towards a supply room, wearing only towels wrapped around her.

“Abra, you ok?” Atarah asked.

“Svend built a dry sauna.”

“A what? Where?”

“A dry sauna, in a section of the supply area. He invited me. You can come, too.”

Svend came around the corner, wearing only a towel around his waist.

“Hello, you two. Yes, Atarah, you can join, though, might be a bit tight. Not much room in there, but you are welcome!”

“Oh, no, you guys can go to your… what? Dry sauna?”

She did follow them to peek in. It was dark, hardly larger than a cubical box, and it was hot! And dry! To her, it felt like sticking your head in a sterilizer oven.

“Oh, no, thank you. You two have fun.”

Svend laughed, “You’re missing out. I bet one of these days, you’ll want to try. They are good for the body. Sweat out those aches.”

She watched them climb in, hearing giggles after the door closed.

“Dear Jabin and Nara… STOP, erase that. That was silly.”

Atarah sat in her compartment in DragonII, staring at the vidscreen, trying to record yet another message to send back to her home.

“START… Nara and Jabin. I miss you so. Ok, you hear that every time I send you a message, but it’s true, and I’m not starting this over yet again. We just finished ‘Turn Around’ and are back at half-gee burn to slow for rendezvous. Three more weeks of elephant. Jabin, explain to Nara. Well, you know, the good parts. Ok anyway, Nara, I hope you are doing well in School…”

‘Shit, I shouldn’t say that,’ Atarah thought. Nara was beyond well in School... “Delete last statement. Start. Ok anyway, Nara, I can’t wait to see your latest creations. You are the love of my life, sorry Jabin, and you take care of daddy. Take him for ice cream and buy mommy one, too.”

She paused the recording to wipe tears from her eyes. She still was so fearful of Nara’s abilities, yet they seemed not to affect her. She just wished Nara could grow up as a normal child. Or at least not grow up so fast!

“Jabin, I love you and miss you. Ok, I’m repeating myself. It’s boring out here. Better than last time,” she laughed for a moment, “Dad says Hi, and Abra keeps me sane. Play our favorite mem tonight. I will, and we can be together again.”

She almost said, see you soon, but that was nearly a year from now. They had only been gone six weeks and had almost that much more to just get there. Then they would have to wait until the orbits lined again to begin the return.

“Sorry, Nara, Jabin, mommy loves you both. Tell grandma hi, and you go to bed at the proper time, both of you! I love you. P.S. How was Camber?” another giggle, “END RECORDING,” She sighed, that was pitiful, “Pilot send message.”

“Yes, Atarah.”

Naarah sat in her lab with little Nara, showing her all the astrometric graphs and plots, a part of Naarah’s astronomical work. Of course, she didn’t expect Nara to understand much of the data, so focused on the holographic displays of pretty pictures of nebulas and star clusters.

“What’s this?” Nara pointed at a spectral analysis graph, full of complex data points.

“That’s how we can tell what a star or exoplanet’s atmosphere is made up of. You know, hydrogen, helium…”

Nara interrupted, “And oxygen, methane, water vapor?”

Naarah, taken aback, “Yes, the SETI projects look for those as possible indications of life. But look at this holo. It’s the Orion Nebula! Pretty?”

Nara ignored the deflection, “But why aren’t YOU looking for those? You need to!”

“Nara, ah, well, grandma does look for those too, sometimes. But, there are many other things of interest in the Universe to study. That’s why we specialize.”

Nara wasn’t having any of it.

“But grandma, this IS important. The MOST important! We NEED to find it!”

Nara squirmed in her grandmother’s lap as if mere sitting was making her restless. She looked back at Naarah, her face almost pleading.

“We NEED to FIND GRANDDAD!”

Naarah looked shocked, “Your granddad is with your mommy. They are on their way to that asteroid.”

“No! Granddad isn’t there. He won’t be there. We NEED to find him!”

Nara frowned at herself, veering off in a tangent.

“I need more Lessons! There’s too many wrong maths. They have it all wrong!”

Naarah hurriedly swept away the holos, thinking they were somehow upsetting Nara. She picked up and carried Nara out of the lab and back towards home.

“Nara, it's ok, granddad is fine. We will probably get a new message from him tonight. And from your mommy, too. I bet your father is waiting for us with your supper ready.”

Nara pouted all the way home.

Atarah flopped into a chair in the DragonII's mess deck where her father and Abra were already eating breakfast. Atarah felt weighted down, heavy, and did not want to eat anything, so just ordered up a coffee.

Abra's bringing up Jabin and Nara made her homesick. And mad that she had not been sending messages to them more regularly.

"Don't remind me, Abra. I had forgotten the boring parts of space travel, so I don't have much to say to them."

Seth laughed, "So you prefer exciting?"

"NO! No, this is fine. It's just I don't have much to say other than, 'Hi, I'm fine, how are you, blah, blah'..."

It was Abra's turn to laugh, "Well, you could always tell Jabin that you're having a WONDERFUL time with me!" she faked an air kiss towards Atarah.

Atarah smiled, "Maybe I will."

"Any time, honey."

"Ok, you two, it's only breakfast time. Long way yet to nighttime." Seth interjected.

"Why, daddy? Wanna join?" Atarah giggled.

"What's this all about? What did I miss?" Svend just poked his head in the mess with the other three.

"Svend, come join! I need a strong Norseman to protect me from these two women!" Seth pronounced, making a show to Svend's Viking heritage.

"Ah, Shield Maidens! And you too, Seth. Good morning! Another fine day."

Svend was a relatively late addition to their small crew. Planetary Resources required Seth to bring along one of their 'Security Services' personnel with them. Seth did not hesitate on the request, only because his daughter was coming. He felt a bit more comfortable having Svend as point man instead of himself or his daughter, knowing that she would not hold back in the face of this unknown.

Initially, the company wanted to send only marines out, but Seth convinced them early on that was likely not a good idea. It was doubtful that a military detachment would be any more capable against whatever they were facing. Seth figured this was a brain over brawn thing. If it really got bad, Pilot knew what to do.

So Svend was a compromise. A very good one from the records Seth read. This guy was trained in nearly every situation known. And apparently valued wits over brute force, something Seth was happy to agree with. But Seth did let Svend know one thing; don't mess with my daughter!

Svend sat down beside Atarah, purposefully picking that seat.

"Well, Seth, I went over your game plan. Pretty good. I agree that we put a droid out to scout first. But, parking DragonII on the far side means we have to relay everything."

Seth was focused more on Atarah's body language with Svend's Nordic maleness sitting beside her than his words.

"Uh, sure. What do you suggest?" Seth deferred his thoughts and refocused on Svend.

"Well, the initial contact part is good. We position Dragon about a kilometer from the surface, near the entrance, drop two droids off, we back off ten kilometers..."

“100,” Seth spoke up.

Svend looked at him, “Ok, 100 klicks, let one droid inspect the area and then enter the airlock while the other relays. If nothing unexpected happens, we move to phase two.”

Atarah speaks up, “If something unexpected happens?”

“We skedaddle.”

“Skedaddle?” Abra asks.

“Back off as far as we can as fast as we can. So be prepared for a max-gee burn, if necessary.”

Svend continued, “But assuming all goes well, phase two. Here’s where I want to change things.”

“I suggest we place DragonII at a 90-degree angle to the mining camp’s cave entrance about five klicks out. That way, we can swing around and come in easily, yet still skedaddle if necessary.”

“Ok, sounds reasonable.”

“I also want to drop some of our supplies off on the far side, first, including one of you.”

Seth’s eyes narrowed, “Why? That seems a risk, in case we have to, as you said, skedaddle.”

“Well, actually, I want them to be in the escape pod with another droid outside and the supplies tied together. They can skedaddle as well. Eggs in two baskets. If all goes well, we swing around and pick them up. If, well, things get dicey, they might be the only way to rescue us, or relay what happened.”

“But we know that all the electronics apparently got knocked out.”

“Yes, but the escape pod is hardened more than droids, is livable for at least a month or two, and would be shielded by 500 kilometers of rock. The whole reason for being dropped on the far side.”

“Shit, I should have waited for DragonI to be refitted.”

“More months?” Atarah added.

“I’ll volunteer,” says Abra before Atarah had a chance, “I know you guys need to be together. I’ll make sure your bones get home.”

Atarah glared at Abra as Svend spoke up, “I was hoping that would work out. I agree. Because Atarah,” he patted her leg, “is going to be my brains, sorry Seth.”

Atarah blushed as Seth replied, smiling at her, “Ok, I agree,” he turned to Svend, looking sternly, “But only if Atarah and Abra discuss this later before leaping.”

Seth leaned back, “I want to go over the details of this with you, Svend, privately!”

Svend smiled and pulled his hand away from Atarah.

“Sure, I’ve already written the procedure out, step-by-step. I want this to be rehearsed in simulation and validated by Pilot within the next two days. We are only ten days from rendezvous.”

He turned to Abra, “Abra, I need to see you later to go over the details of each contingency that my plan contains. You need to understand just how alone you could end up being.”

Initially feeling brave for volunteering and nervous at being left alone in this plan, Abra now felt nothing but nervousness. More for what she might be facing if something should happen to her friends.

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"Nara, eat your vegetables. If your mother were here, you would eat them," Jabin trying to coax his daughter.

He knew that line of thinking wasn't going to work. Evidently, the desire not to eat vegetables was inherited. In this case, inherited from her mom. Nara may not have been birthed by Atarah but was created from a mix of their DNA that had been stored for nearly twenty years on Earth. Which did not seem to impact that particular trait.

Instead, he worried that Nara's apparent once-in-a-century mathematical genius was not from Atarah or him. Did Mr. and Mrs. Einstein ever wonder how their son had become such a mathematical genius when neither of them was such?

"Ok, Nara, I'm going to send them to the recycler, and you will have them next month!"

Nara sat pushing her carrots around her plate; her mind was not on vegetables, not on supper at all. Instead, she was twisting and turning pieces of the fabric of time and space itself. At least some of the mathematical representations of such constructs. In her mind, it was like turning the pieces of a jigsaw puzzle. A multi-dimensional jigsaw. Some seemed at first to fit, but as more came together, those same pieces no longer matched up. The jigsaw kept changing. It was like holding onto slimy, wiggling worms in the gardens.

"Nara! You haven't heard a word I was saying!"

She looked up, "I don't LIKE these vegetables. They don't FIT! Their color doesn't TASTE right!"

"Don't you mean their taste and colors are wrong?"

Jabin thinking their little mathematical genius here might be somewhat lacking in the area of vocabulary. But she just looks at him queerly, as if HE were the one with the incorrect vocabulary. She realized he just didn't understand. He didn't understand the universe around them as she perceived it. Things constantly vibrated and twisted, never still, bending and warping in four, five, or more dimensions. However, her brain was still shaping itself as well, to allow her to express it, to predict it, control it.

"Daddy, I hurt!" her headache from School pounded as her mind remodeled itself to make sense of her Lessons that day.

He picked her up, took her to her bed, and played a soothing mem through her BCI, rocking her at the same time.

"It's ok, honey. I will take care of you. I love you, my little Na Na."

Early the next morning, Jabin awoke, realizing he had fallen asleep beside Nara in her little bed. Stretching the kinks out of his body, he saw a message waiting. At first, he thought it was from Atarah, but its origin was Earth. Coming from United Government, UG headquarters in Geneva, specifically, the Institute of Advanced Intelligence Studies.

He figured this was eventually coming and had so far shielded Nara from the psychoanalysts and their sometimes not-so-humane view of their subjects.

He played the message, “Dr. Gowon-Branson, I am Dr. Ito, Eimi. My colleague, Dr. Kimi Ito and I would like to discuss something with you pertaining to your wife, your daughter, and their interactions with both the Cecilia’s Pilot AI as well as the Armstrong City AI, which I believe you call ARMIE. We work directly with iAI Corporation and the UG IAIS. We will be coming up to iAI Luna and would like to meet with you while there. I think you will find it interesting concerning where we are with deciphering the cube data and messages. Also about…”

He watched her face as she continued to speak. Her face, a bit too close to the camera, attention split between the camera and something or someone else, making her head and eyes turn a bit too rapidly. She had recorded this in a hurry. Near the end, he realized she was recording this as she hurried down a hallway and staircase, into a conference room with many others milling about.

“…please feel free to reply at your convenience.”

He let Nara sleep in this morning as he decided.

Nara sat on her School couch, eyes closed, waiting for her next Lesson. She had sat fidgeting with Lessons in marine biology and world history, subjects she wasn’t interested in. She asked Teacher to give more mathematics. Instead, suddenly, she was provided with a quiz. A math quiz. She thought it funny that they were giving her problems in Discrete Geometry. AI’s had solved most of them, like Ulam's Packing Conjecture, years earlier, so she felt it a waste of time. She wanted new, unsolved problems. But the Lesson would not advance. She had to solve it. She giggled, thinking she could just give any wrong answer, but she didn’t like wrong things, especially wrong maths.

She paused for a few seconds. Her mind shifting to mundane (to her) problems. She gave her solution to that and a few more questions that kept being presented to her.

But no more. She had enough and yelled in her mind, “STOP IT! I HATE THIS!” throwing a mental tantrum into her BCI. It worked. The next Lesson began. One she liked on hypertopologies.

Afterward, when she opened her eyes, her daddy was there to greet her. Jabin had been standing for some time, watching Nara, eyes tightly shut, face sometimes contorted into frowns and other times smiling brightly. He wiped away the holo display monitor as she opened her eyes.

“Daddy! I love you! I’m hungry!”

“You always say the same things when you come out of School,” he laughed and picked her up.

It still worried him about her accelerated Lessons. He hadn’t realized the significance of the report on the math problems she had been given.

A third of a million kilometers away, two young women sat in a lab in Geneva and stared at that same report. One sucked in a breath.

Atarah sat in the workout room. She liked coming during their sleep cycle, a little time alone. The extra gee forces made workouts harder than back home. Sweat ran down her face and body. She wiped herself with a drysheet and tossed it into the cleaner. She didn't think about the fact that the moisture from her sweat was being sucked from the towel, cleaned, and then recycled into the water she drank. All moisture was recycled, including their urine. Nothing new to her. Her entire life in Armstrong City had been spent with the same water over and over. She sucked a mouth full from her water bottle.

She smiled to herself, remembering the time Jabin came up behind her, saying he liked her all hot and sweaty.

Atarah thought back to when she and Jabin were aboard the Cecilia, before the… anomaly. She blushed at what they did under the watchful eye of their AI.

It was then she realized that Pilot had likely spent a trillion-trillion cycles processing her and Jabin's intimacy together as well as their mating rituals. They had unknowingly taught their AI what it was like to be in love. Then for a trillion-trillion cycles more, it had been left alone floating through Space as its power dwindled.

She wondered, did it contemplate death?

Little Nara sat on the couch, watching her grandmother finish several reports on the latest exo-spectral data Naarah had been collecting. Nara became quiet, closing her eyes, concentrating. Her young eyes moved rapidly behind her closed eyelids, as if in REM sleep. Her face scrunched, and her tongue stuck out the side of her mouth. It was complicated. A difficult problem to solve. She could feel the solution just eluding her, so close, but then sliding away, disappearing from her grasp. She frowned and let the BCI connection close.

Suddenly her eyes popped open…

"Grandma! Grandma! Mommy! Mommy hurts! She needs us!"

Nara leaped up from her seat and began pacing back and forth, like an animal looking for a way out, or in her case, a way to help out.

"Nara! What is it, baby? No, no, mommy and granddad are fine."

Though Naarah pulled up the latest telemetry from Blue Ion, just to make sure.

"Look, Nara. See," she pointed at the holo screen showing the current status of DragonII, all green.

"No! No! No! Mommy will be is in trouble. We need to help. Granddad is will be gone, too. Gone there! It doesn't fit yet. Need more time. Need more Lessons! Help them!"

Naarah had gotten used to Nara's mangled sentence structure, seemingly intermingling past, present, future tense. The School reports that ARMIE produced seemed to put little importance on it.

Naarah picked up Nara and held her tightly, trying to console her as Nara continued in almost a babble. She squirmed and wiggled in Naarah's arms. Naarah opened a BCI

connection to try to send Nara a calming mem. Instead, her mind flooded with blurred feelings of fear and excitement, mixed with geometries full of colors and patterns, bending and warping. Bits of Atarah's face in sadness and fear flashed pass, sometimes frozen, sometimes moving backward. Seth, eyes wide, reaching up, then gone. All mixed with clouds of haze, like a partially completed motion painting, the artistry still unfinished.

Then it was gone, like fog vanishing in sunlight. Naarah felt Nara calm and quiet. Around them, a flowered field with cool breezes and sunlight. The calming mem had taken effect. Naarah released the connection but allowed the mem to continue. Nara lay in her arms, quiet now, seemingly exhausted. Naarah realized that the entire episode with Nara's mind had lasted only a single moment.

As she tried to make sense of what Nara had given her, she became aware that Nara had been working on some mathematical problem in her head, not as formulas and numbers. Instead, as the patterns she perceives them to be, and that during her concentration, somehow came flashes from her mother and grandfather.

It was a kind of foresight, a prescience. And it was foreboding to Naarah.

Onboard DragonII, the four had walked through the plans and numerous contingencies multiple times. It ended up taking nearly a week to complete, as each had found things that needed to be added or changed. Either because they weren't prepared to do, or were just adding their perspective. Most were amicable to both Seth and Svend, even if many were compromises in the end.

Abra had been chosen for this mission to the asteroid because of her exo-life studies and work on several SETI projects. She theorized that the first intelligent life forms humans were likely to encounter were extremely likely to be machine and not biological. These theories were around for centuries, ever since the first talking computer. Though, her idea took it to a more extreme form where the machine was no longer machine and organisms were no longer biological, not android but something entirely new. A type of crystalline life, no longer tied to the limitations of biology or electronics. Life driven at the atomic level, below even the molecules that made up DNA, and capable of surviving for millions if not billions of years.

With the discovery of that 'diamond' cube described in the last transmission from Karal and her ill-fated mining research team, Abra had hypothesized that such a life form would likely be neither malevolent nor benevolent. Its purpose might be as far from our existence as us from that of a gnat.

Did the 'human' unknowingly swat the 'gnat'?

She had reminded people that a single sugar cube contained roughly as many atoms as there are stars in the known Universe. And this cube was vastly denser than a sugar cube and dozens of times larger. The computing power was unimaginable. So was the potential capability of such a device.

Before they left Armstrong City, she, Camber, Atarah, Jabin, Naarah, and Seth had sat for many nights discussing this and its ramifications. Onboard the DragonII, these discussions had continued.

One evening, after dinner, Atarah approached Abra's compartment, tapping the door.

"Abra? It's Atarah. Can I come in?"

"Silly, of course, come."

"Sorry for interrupting…"

"I wasn't doing anything important, Atarah. Please, sit."

She sat on Abra's bed. Their meager rooms only had a single chair, desk, and cocoon bed. Space and comfort wasn't the idea behind a mining exploration tug. Go take a solar yacht cruiser if you wanted luxury.

"Abra, are you ok with this idea? I mean, really ok? Being left by yourself?"

"Well, I'll have a wonderful droid with me. We will have a tea party."

She added, more serious, "Atarah… you guys stay safe. I don't want to have to come rescue you. It might get rather… intimate… in that pod with the four of us!"

Atarah, looking serious herself, "Abra…"

Abra sighed and nodded, "I understand. Anyway, you guys will be fine and come pick me up, right? You won't forget me?"

Atarah laughed, reaching out to Abra. Abra slid across and sat on the bed with Atarah, their arms wrapping each other.

Abra added quietly, "I've been alone before. I can be alone again."

"Don't say that, Abra! I'm always here! You know that. You know I love you!"

Abra twinkled, "Yes, we're high Compat, remember?"

Atarah paused, looking at her friend, "Of course."

Abra leaned over and placed a light kiss on Atarah's lips. The two looked at each other as if gauging reactions. They had been in close quarters on this trip for over a month now. It reminded both of them of that sad time years earlier, just after Abra had lost her mom and had been 'adopted' by Atarah and her parents until Abra's father returned from Farside. Back then, the two young teens had experimented, and that lingered in their thoughts now.

Atarah broke their hesitancy. She started unfastening Abra's top. This time, it wasn't an experiment. The two were lovers again, if just for the night.

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Jabin sat watching Nara eating spaghetti at the café. Naarah and Caare sat across from them.

"Jabin, has Atarah sent any messages lately, mentioning anything unusual?"

"No, mostly how bored they were. And that they were preparing to rendezvous with 2 Pallas. She even sent me a copy of their plan, just to keep me filled in. Why."

"And Nara hasn't mentioned anything? Anything to you or in a message to Atarah?"

"No, nothing. What's the problem?"

"I don't know. Just that Nara seems to be able to really focus herself, her thoughts, at times. She seemed worried about Atarah and Seth."

“Not too surprised. Her School reports still show surprisingly advanced maths. She’s rather remarkable there. But away from School, I haven’t noticed anything.”

Jabin continued, “We are supposed to meet with the iAI folks soon concerning her math abilities. I’m hoping they can shed some light.”

He reached over and wiped Nara’s mouth as she was getting more tomato sauce on the outside of her mouth than on the inside.

Naarah was hesitant to say anything more about Nara’s fear of trouble on the DragonII mission. Particularly since Nara hadn’t said anything further, almost like she had forgotten about it.

Jabin leaned forward, whispering, “Is there something the matter? At 2 Pallas?”

Naarah shook her head. Caare patted Naarah’s hand.

“Can I have ice cream now?” Nara’s smile broke the chill surrounding them.

Seth sat with Svend in the lab area of DragonII. Sometimes the two alpha males squared off with each other. But Svend was disciplined enough to know rank, and Seth was the leader.

As leader, Seth had always felt responsible for everyone, not only the ones on this mission but particularly responsible for Karal and the mining team he had left behind. The ones he hoped beyond hope to rescue. He imagined finding his team, huddled in one little corner of their underground cave (tomb?), waiting for a rescue that might never come.

He knew this would likely have been different had he not taken the original Dragon away, those long years ago, to save his daughter, marooning his team on that asteroid. He had struggled with that decision ever since. Thus, he was determined to bring them home, no matter what he found.

He remembered a story, long back of early Antarctic explorers, Shackleton, leaving 22 men behind with only him as hope for rescue. Had he failed, they would have never known and would have perished. But his attempt was successful. All 22 were rescued after months of incredible hardship endured by both Shackleton and the waiting crew. Seth hoped that some of Shackleton’s perseverance and luck ran in his blood.

Svend could see the worry in the furrows of Seth’s face, furrows that seemed to get deeper as they drew closer to their objective. He knew he had to focus on this mission being a rescue and not a recovery. But he did not allow himself to go beyond the point of their exploration of the mining base, at least not in his outwardly discussed planning. Inwardly, he knew the odds of survival. He also was well aware of his primary mission, given to him by his commanders at UG headquarters. Their orders, his mission, to recover the artifact.

“Svend, assuming the first two phases go as planned, so phase three is where we come in.”

Svend brought up a holo display of the tunnel rooms built by Karal and the mining team.

“Yes, I will go in first, with a droid. I will signal for you to come. First, our priority is safety, second find the team, third retrieve the data chips, fourth find the artifact. Just as detailed.”

He fibbed about the order of things, knowing Seth’s priorities.

“Where does Atarah come into this?” Seth asked.

“We’re leaving Atarah here, in Control pod. Make her feel important… and safe.”

“Svend, you better not phrase it that way in front of her. Else, she’ll have you stuck in the lavatory toilet!”

Svend laughed, “Ja! Absolut! She’s quite something that girl.”

“Svend, that brings up another point. Please don’t, ah, encourage her.”

“Encourage? How so?”

“You know. Don’t encourage her to be a rescuer. She tends to get too close to people at times. And when she does, she unnecessarily risks herself for others, for you.”

“You want her for yourself?” Svend kidded, then seriously, “No, if something goes south, she must leave… without me. Possibly without you. Pilot will be handling that. She won’t have to make that choice.”

Nara sat quietly in her room. She had another headache from her Lessons at School that day. Though only three years old, she realized her parents did not understand her anymore. But that was ok. She did not care. Her mind lived in two worlds. ARMIE told her it was two planes. She didn’t understand, but ARMIE said that it was only temporary. She liked ARMIE. Nara could see that SHE liked her. (Nara thought of ARMIE as a She, while Pilot was a He).

The three played together, Nara, ARMIE, and Pilot. In their minds. She had tea parties with them. Parties outside of this reality of Space and Time. Nara loved how there seemed to be an infinite number of variations to their tea parties all around them, all happening simultaneously. Some so subtly different as a single atom shift while others were as if each of her three party-goers were strange, ferocious beasts with tiny delicate arms explicitly designed to pick up the teacups ever so daintily. She giggled, seeing big Nara’s, little Nara’s, old Nara’s, furry Nara’s, scaly Nara’s…

Nara stood up in her mind, accidentally knocking the table. In front of her and behind her, a million teacups fell to the floor, falling and breaking in a million ways. Some even bounding off the floor and back onto the table, unaffected. Nara laughed.

“Nara? Nara!” her daddy called to her.

The tea party ended, and Nara was going with daddy for a treat.

Seth and Svend finished loading supplies into containers attached to the escape pod. Abra wore a spacesuit to allow her to exit the pod’s airlock if she needed to. The droid stationed itself just outside the DragonII.

Atarah hugged Abra and, ignoring their audience, kissed Abra a long goodbye kiss. Seth hugged Abra, but she surprised him with a kiss on the lips as well.

Abra giggled, “Ok, Svend, your turn. This isn’t goodbye. I’m just taking advantage of the situation, he, he.”

She held out her arms, and Svend obliged her. Atarah looked at the two of them and realized that Abra wasn’t as shy as she led her to believe.

They finished closing up the pod, and Abra backed it out of its berth and moved to the spot they had set anchors for. Pilot backed the DragonII away as the three returned to their duties.

“Ok, you guys, have fun! I’ll just sit here, twiddling my thumbs. Be safe!”

As they moved away from the asteroid, Pilot released a relay sat to allow them to communicate.

Pilot offered, “I have good telemetry between the Pod and DragonII.”

They continued navigating around the several hundred kilometers of 2 Pallas to their phase one station keeping location.

Unseen far distant from the DragonII and its team, a mechanism stirred as the asteroid rotated them into its view. It saw a fusion heat source.

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“Grandma, what’s that star?” little Nara asked, fingertip pushed up against the vidscreen.

Naarah was looking at a feed from the Ultra Deep Sky Survey telescope, verifying all its instruments were aligned correctly. She had brought Nara with her to the observatory as she assisted the techs in upgrading the telescope. They were pointing at random locations, selected by ARMIE for their specific star types. Nara had been quietly watching her grandma as she worked but suddenly clambered up on her chair, leaning on the worktable, pointing at the vidscreen.

“Hum? Which one, honey?” Naarah asked, not paying attention.

“That one!”

“This one?”

“NO! That one right here!” she poked her finger repeatedly at a tiny white dot on the screen among the thousands of others.

“I don’t know, honey.”

“ARMIE! What is THAT STAR!” frustrated that her grandmother would not answer such a simple question.

“That is HD 156411, also known as Inquill. It is a G-type star similar, though slightly larger and brighter than our Sun. It is approximately 179 light-years away in the constellation Ara, The Altar. Four known exoplanets are orbiting it…”

“STOP!” Nara said, then opened a BCI connection to ARMIE.

A moment later, she looked up at her grandmother and pointed, again poking the screen with each word.

“THERE! We need to GO THERE!”

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Months earlier, Seth and Naarah sat at their breakfast table.

“Seth, you know Atarah wants to go with you.”

He looked up, sighing, “Unfortunately, yes. She says it is her right to retrieve the alien artifact. It’s kind of hard to deny that.”

Naarah looked displeased. She had hoped that having little Nara to look after would settle Atarah down. Instead, it appeared that she was letting Jabin do the settling as she prepared herself, working out more, taking bone density supplements, learning the DragonII’s systems.

“Can’t you persuade her otherwise?” Naarah already knew the answer.

Seth didn’t bother to reply.

“You know, you don’t have to go either. A UG team could do it. And she would stay if you stayed.”

But Naarah knew the answer to that one as well. Seth and Atarah were too much alike. Duty, responsibility, science, adventure all coursed through their blood.

She sighed, sliding over beside him, taking his hand, and kissing him.

“Don’t you dare let her take risks. And don’t you dare, either. You come back to me. Promise?”

He kissed her deeply, lovingly. But he did not answer.

Jabin was led into the Lunar iAI Corp conference room by a reception droid. The room was small, just a table with five chairs. One was occupied by a young woman. She pointed to the chair at the end of the table.

“Dr. Gowon-Branson? Please, come in, have a seat.”

“Call me Jabin, please, thanks.”

“I am Doctor Ito, Eimi.”

She reached over, and they did a typical professional ‘handshake,’ fingertips tapping palms. She was only slightly taller than him. Her face was flawlessly fair, with narrow, dark eyes, thin nose and lips, pure white teeth. Light pink lip gloss, darkened eyebrows and lashes seemed to be her only makeup. She had her hair short and straight, but stiff and unmoving as she leaned over the table. She had an elaborate silver ear cuff and a matching necklace. Her clothing was disciplined, professional, a mix of different shades of browns. She had a small tattoo on the back of one hand in the form of a Japanese letter, likely her families’ emblem.

As he sat, the young woman, obviously Earther, Asian to his eyes, stood, bowed slightly, then reached to offer him refreshments.

“Tea?”

“Yes, please.”

“This is from East Asia. And these biscuits are my favorite. Have some?”

“Thank you,” knowing Earth foods were a rare treat.

Jabin then noticed that the physical table extended virtually into a much larger room with at least ten more chairs, only one of which was occupied.

“Let me introduce you to my colleague at headquarters, Raj Balakrishnan, from the Institute of Advanced Intelligence Studies at UG Headquarters. This is Jabin.”

There was a slight delay marking the transit between the Moon and Earth. Raj looked up from his numerous holo and vid displays.

“Ah, call me Raj, please. Good to finally meet you, Jabin. I hope you, Atarah, and the little one are doing well.”

“Raj, yes, thank you for asking. I guess that is part of why we are meeting today?”

Jabin noticed that the holographic image of the remote conference room was quite convincing. Even the lighting and colors between the two rooms matched, and the grain of the simulated wood table lined up. This was obviously a high-bandwidth connection. Apparently, credits were not an issue.

Suddenly, another young woman entered hurriedly into the room with Jabin and Eimi.

“Sorry for being late,” she held out her hand, fingertips bent.

He was startled at first glance, standing and raking his fingertips across her hand, instead of just tapping her palm. She smiled shyly. That was more of a friendly greeting than business.

“Oh, Jabin, this is my sister, Kimi…”

Kimi completed, “…identical twins, as you can see. Good to meet you, Jabin.”

Her face and hair were identical, though she had on darker lipstick and no silver ear cuff. Her necklace was of a gold loop with the same Japanese character on it. Her clothing was nearly identical, though the brown shades were mixed with cherry blossom pinks and whites. Eimi poured her some tea as she sat.

Eimi started, “Good, we can begin. I understand there are several subjects to discuss.”

Kimi pulled out a small case. Opening it revealed a rectangular block. A holo display appeared in front of both Eimi and Kimi, each sitting on separate sides of the table.

“This is a diagnostic… toolkit. For our AI’s,” said Eimi.

Kimi added, “It contains a complete snapshot of both the City AI and your Cecilia pilot AI as of this morning.”

The two women switched back and forth in their conversation, making Jabin bob his head as if he were watching a tennis tournament.

“We use it to freeze in time their memory contents.”

“This is an immutable copy. Used for legal as well as forensic purposes.”

Jabin interjected, “Legal?”

Kimi answered, “Oh yes, sorry, in case there are any legal issues that arise, this is considered valid evidence in the United Government court system.”

Eimi added, “It cannot be altered without its crystalline substrate being affected at the physical atomic level. Unlike, of course, most holo, vid, or BCI data…”

Kimi finished, “…which can be, altered, even unknowingly.”

They paused. Raj took the delay to speak up.

“We do this periodically to our AI’s so that they can be reverse-engineered to understand their problem solving as well as to capture a permanent record of events. The last time your City AI, you call ‘ARMIE’ I believe, was snapshot was, ah, that unfortunate event with the lunar eco-terrorist. You were there, correct?”

Jabin squirmed in his chair. They obviously knew much about him while he knew little of them.

“Yes.”

Eimi started again, “Anyway, there are several subjects you want to talk about? The first I suggest is the Message. That’s why Raj is here.”

Jabin nodded, “And about something affecting Atarah. And Nara, my daughter.”

Kimi spoke, “Yes, I wish we could meet Atarah, but I hear she is on her way back to the asteroid?”

“Uh, yes, to 2 Pallas.”

Eimi, “Yes, for that yet another mysterious object and event there. Send her our best wishes for a successful mission next time you talk with her.”

He nodded—too many mysteries for sure.

Raj started again, “We may have made some headway on the message.”

Jabin looked startled, not expecting anything from that.

Raj continued, “Yes, it appears that the so-called noise data was an approximation of translations of multiple languages and symbols. The data was quite compressed, thus sounded like noise. Your Cecilia Pilot AI did a wonderful job, articulating the message, considering the fractured nature of the information.”

Jabin interrupted, “You’ve decoded it?”

“Deep analysis… sorry… oh, no, not yet. But we have narrowed much of the message data to a symbolic representational language with similarities to several early writings, some we call pre-proto-literate. Think of the message as a kind of Rosetta Stone of Canaanite, Akkadian, and early Near Eastern origins mixed with similar but unknown elements. Unfortunately, it appears quite incomplete, as if we only had a small chip off the Rosetta Stone.”

During Raj’s pause, Jabin started without stepping on the transmission lag.

“What does this mean? I mean, how does Pilot end up with a fragment of ancient dead languages it considered as something important to tell us?”

Kimi replied, “Good question, that’s where our forensic analysis team has been working on discovering. What we have learned so far was that much of the time between when you and Atarah left the Cecilia… that must have been frightening… and the time the power failed, the Pilot AI had been studying the… artifact… that you and Atarah recovered.”

Eimi continued, “Strangely, just moments before the power failed, before the AI could even transmit the data, the ‘message’ just appeared in its cache buffers. Mere milliseconds later, the hypercomputer shut down. Luckily, the data was flushed to permanent storage in those milliseconds. Then, when the AI was restarted, it completed sending the message, verbally.”

Kimi, “Which leads us to the next issue, that of the message your father received…”

Eimi excitedly, “It just happened that that shutdown time was in the same timeframe as the end-of-transmission of the telemetry from 2 Pallas mining team.”

The two women stared at Jabin. He didn’t make the connection.

Raj took up again, “Amazing, isn’t it? Anyway, I need to get back to work. I think the rest of your items don’t need a linguist such as humble me. Good to meet you, Jabin, and Eimi, Kimi. I will, of course, let you know if we get further.”

Kimi leaned over, “The significance that the two events; Pilot’s message and the disappearance of the team, though separated in space by many light-hours, these two events happened apparently SIMULTANEOUSLY. We’ll know more once Atarah retrieves the artifact and data modules.”

He got it. Something communicated FASTER THAN LIGHT.

Jabin watched Raj get up and walk strangely, stiffly without any of the bunny hop steps he was used to seeing, and left the Earthbound conference room. The image blanked to a lovely outdoor view of the lunar surface.

Eimi spoke up, “Let's take a little break, and then we will get to your next item, ah, about Atarah and Pilot AI?”

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Atarah sat in the DragonII Control Pod. Holo displays and vidscreens all around her. Seth and Svend were in the lab with similar holo displays. They were feeding Pilot procedures for guiding the two reconnaissance droids at the mining site. The DragonII had moved out 100 kilometers to one side of the site after dropping off the droids. Their feeds were relayed to Abra on the other side as well as beamed towards the Moon.

“Abra, you getting this?”

“Yes, Atarah. Just fine.”

Abra was recording everything to data crystals. Memory capable of surviving extremes that little else could. Pilot was doing the same.

Svend requested Pilot to station the larger droid just outside of the mining airlock. He had the other droid recon the area, directing it to where the two spacesuits were located. Everyone held their breath as to what the droids might find.

“We need better names than just small droid, large droid,” Svend called out to break the tension.

Atarah spoke up, “Huey and Dewey.”

Abra giggled over the commlink, “I guess I have Louie!”

Seth laughed, “That must be from Jabin’s love of old space sci-fi movies… and not the, ah, Disney ducks?”

Other than the droids' transmissions, the DragonII used no active radar or scanning, only passive thermal, radio, and visual cameras. No need to act hostile. Right?

Svend spoke quietly to Seth, “The warhead is now active.”

Seth replied, “Hopefully, we won’t need it.”

Early on, Svend had strained his initial welcome aboard DragonII when Seth noticed the package being loaded. Only after a heated argument with Planetary Resources did Seth grudgingly accept it but required that both of them would be needed to trigger it. The 250-kiloton warhead was attached to poor Dewey, sitting out there. No need to act hostile… unless they had to.

Atarah had Pilot turn on infrared and x-ray floods from Huey as it approached the spacesuits. The suits were on the surface, attached loosely to anchor lines. It looked like they had been working on some equipment and then just floated down under the low gravity of the asteroid.

“Dad, they’re EMPTY! No one is in the suits!”

“I see that. Very strange. Move in closer.”

She had Pilot bring the droid right in front of one of the suits. You could see inside the empty helmet, and x-ray showed no bones. She had it try to activate the suit. Nothing. Either the power cells were dead, or the electronics were fried. She repeated with the other suit. Same.

“Why would they leave the suits outside like that?”

“Good question. Let's move Huey on inside.”

At the airlock, Pilot had to command the droid to use the emergency manual release to open it. Inside, it closed the outer door, then manually released the inner door. It opened, flooding the lock with atmosphere.

“Well, we know there’s still air,” Seth commented.

“But look at the temperature, deep cold. Minus 70 Celsius,” Atarah spoke.

“A chilly day in Stockholm.”

“Very chilly.”

Huey moved on into the tunnel as its lights reflected off ice crystals' sparkles on the floors, walls, and ceiling. Thermal cameras showed nothing. Everything was the same temperature.

“Pilot, begin tunnel recon phase.”

They watched as the droid moved from room to room. Everything seemed intact, normal even, if it wasn’t for the ice crystals and lack of light.

They found more spacesuits. Empty.

“Where is everyone?” She didn’t want to say bodies.

Mess hall had plates on the table, food frozen. The power distribution from the fusion reactor looked fine. Just no power. They had already investigated the reactor itself. It was dead. The antimatter container was still there but no antimatter in it. The fuel cells and power packs on all the equipment were dead.

Huey entered the Auto-Doc room. Nothing unusual there. No bodies either.

The final room came up—the one where the artifact was likely to be; the lab.

The droid moved into the lab entrance and paused. Pilot reported that there was nothing unusual there, including no artifact on any of the workbenches.

“Ok, guys, where is everyone? And how could the power on everything be drained? Some of those should have lasted years, even in far worse conditions than here.”

Svend spoke up, “Seth, Atarah… and Abra, it’s my turn to go in.”

Jabin slumped back into the iAI conference room chair. The message was from dead languages? It was somehow tied to the weapon round that hit them? Or to the strange artifact and happening on 2 Pallas? Or both?

Eimi and Kimi came back into the conference room, arm-in-arm chatting about something, stopping as they entered, then returned to their seats on opposite sides of the table.

“Good, now tell us about the ‘I LOVE YOU’ event.”

Jabin blushed. He just realized that every mem recording and everything they had said and done on the Cecilia was known by Pilot and now in that little box on the table. Did they know, too? He blushed profusely.

“Well, ah, uh, Atarah, ah, said that…”

Eimi reached over and touched Jabin’s arm, “Don’t worry. We are the only two that have access to the diagnostic snapshot. This room is also free of all AI, no recordings of any type unless specifically configured.”

Kimi reached and touched his other arm, “You can open your BCI firewall in safety here. There is no connectivity unless we activate an internal-only system.”

Jabin looked at his arms, still held by them, then at each of the two of them. Their eyes stared at him. He wasn’t used to being alone with young women around him, two Earthers, sisters at that. He fidgeted as they sat back.

Jabin took a breath and started to describe what happened, “Well, Atarah was, trying to determine why Pilot could say that it loved her. She asked something like, ‘how do you love me?’ and it played, no, it created a mem.”

Kimi, “May we replay the event?”

“Ah, well, Atarah said it was rather… intimate.”

Eimi, “We will abstract the BCI. It will feel like a, well, a movie of sorts. Its recorded emotions muted.”

Jabin wished he could ask Atarah for permission first but went ahead and approved as he guessed she would, too. They opened BCI connections and began the replay, starting at that question from Atarah.

The three were in a field of flowers, looking through Atarah’s eyes. Jabin recognized parts of this as one of Atarah’s favorite mems. The scene shifted from fields to streamside to forests. He felt what was kind of like a kiss. Like someone kissing Atarah, without actually seeing her… or making out who was kissing her.

More scene shifts. Now into a grassy field. He could tell she was naked without actually seeing anything. The shadowy figure (him? not him?) was kissing her, touching her. Passion built. From this point of view, it reminded Jabin of watching some of the old romantic movies where you knew something was happening but only saw glimpses, like candle flames or gauzed lovemaking. He could feel her desire increasing, as if the gauze curtain was being lifted. Suddenly there was a burst, orgasm. It hit him, even muted, much like one of their encounters on board the Cecilia when he was paralyzed, and she had shared her connection fully. The recording abruptly halted. The emotional datastream was apparently not as muted as they had thought.

Eimi sucked in a breath. The two women looked flushed. They plainly had not seen this mem recording before. He wasn’t sure that was good or bad.

Kimi spoke first, “That was… interesting.”

Eimi stifled a giggle. Jabin blushed yet again. The two young women looked at each other, then at Jabin, adjusting themselves, regaining their professionalism.

Eimi quietly said, “I should have removed or reduced the emotional levels more. Sorry about that.”

“Kimi, that was very unexpected for an AI. We will need to run a tracer to mark all of the integrals that lead to this point.”

“Yes, I suggest that we start by studying the constructs created by the Pilot AI to render this scene. It appeared to be pieced together from other mems to create an amalgamation of not only sights, sounds, and smells, but of specific amplified emotions that… It… wished to represent.”

“It built a storyline that worked much like a literary romance novel, ending with the characters, it and Atarah in sexual bonding!”

“For a mem, even a romance mem, this is unremarkable, but what is remarkable is that the AI clearly WANTED to create this to express its FEELINGS towards Atarah as best it could!”

“Yes, WANTED! It WANTED to produce these FEELINGS!”

“Incredible! It wasn’t ‘asked’ to create this scene. It indeed does display a connection at the emotional level to her. It LOVES her.”

“Oh, sorry, Jabin! Didn’t mean to leave you out. It’s just that we’ve never seen an AI act quite like this on its own. I suspect we will find clues to how this learning occurred in previous events.”

Jabin muttered, “Oh, ah, well, ah, we were just mated, and we were, ah, alone… for months.”

The two girls laughed, “Don’t worry, we will be… discrete. Anyway, most of this likely came about due to the AI’s relative isolation during the months when you two left the Cecilia and the power failure. The AI would have had significant time to…”

“…think by itself! We need to see if it discussed this with City AI.”

“Yes, though, the data rate would have been very low at that distance. So it was pretty well isolated.”

“Oh my! It would have had little to do for what would have been lifetimes of human time.”

“It was like Robinson Crusoe, without the hardship. Just boredom.”

“And I suspect mems of Atarah became its ‘Friday’!”

“Oh, sorry, Jabin, we never had a case quite like this.”

The meeting broke up, and he hadn’t even been able to bring up anything about Nara and Lessons.

Atarah had Pilot bring the DragonII down to within a kilometer of the mining base. Svend and Seth left the DragonII as soon as it reached that point.

“Ok, Atarah, move back away.”

“I’m only moving five klicks. Dad, are you ready in case Svend needs you?“

“Ready! Svend, go for the mining airlock.”

Atarah smirked, “By the way, you do realize I’m just a glorified seat warmer here. Pilot is doing all the driving.”

Seth laughed, “You’re commander, Captain Atarah!”

He heard two young women giggle.

Atarah had vid feeds from both Svend and Seth as well as the droids. She also could see Abra, who was also receiving and recording the same. Atarah held her breath. Huey had returned to the base airlock to meet Svend as he cycled through. She saw Svend enter the tunnel inside the base.

He called, “We need to get some power in here.”

Seth replied, “Svend, I will prep the power module, and Dewey and I will install it out by the dead reactor.”

The base itself wasn’t large. It consisted of a central tunnel a few meters in diameter and less than fifty meters long, roughly hewn from the rock, sealed and coated with insulation, but not smoothed in any way. Ducts and cables ran along the ceiling and floor. Other tunnels branched off and turned into various rooms; mess hall, supply room, head, lab, bunks, and control room.

Svend made his way to the control room. He wanted to retrieve the memory blocks before rechecking the rest. Gravity was so weak, he had to use his hands to keep from hitting the ceiling. If he stopped, he slowly floated down the tunnel. They had noted that the main tunnel was a vertical shaft, but it had no ropes or ladders. Now he could see why. You could fall dozens of meters with a barely noticeable effect. Climbing out would have been just as easy. The side tunnels were horizontal, but there were smaller shafts that lead in different directions. Svend didn’t know what the shafts were for, though guessed maybe drilled out following veins of metals.

Suddenly, the lights came on, and the entire tunnel was visible instead of just what his headlamp illuminated.

“Ok, the lights are on. Thanks! I’m going to the control room now.”

It didn’t take long to find the memory blocks. The systems were all off, but they powered up when he tried.

“Strange, there doesn’t appear to be anything wrong with any of the systems. Other than the lack of power. It’s almost like something sucked all the energy out of everything here. I have the memory blocks. I’m sending them out via, ah, Huey, and now will head to the crew quarters and then to the lab, just to be sure things weren’t hidden.”

Seth was at the mining airlock when Huey came out. He sent Huey back to the DragonII, still station keeping five kilometers away. He went to the various piles of equipment anchored around the site to see if he could determine anything.

Atarah looked at Abra’s vid feed, “Abra, you ok?”

“Sure. Very exciting here. Glad I can at least watch. Louie is so much company, NOT!”

“Shit!” Seth yelled.

Both Atarah and Svend called out, “Seth, what’s wrong?”

“Sorry, guys, just another empty spacesuit, it was standing behind some equipment, and it moved. I think I hit an anchor cable connected to it.”

Seth took a breath, “Strange. Its position is like someone was working here. But the suit is empty. Like they just decided to pop out and disappear in mid-stride.”

Naarah sat with Jabin. It was still early afternoon, and Nara was still at School. She had come to Jabin’s workplace, asking to see him for a few moments before she went down to pick Nara up.

“Jabin, it’s good to see that you’ve just about recovered.”

“Yes, I should finally be free of these exoskeleton legs in the next couple of weeks.”

Naarah looked at him, “I’ve put in an emergency request for time on both the ULT Farside telescope and the 10 Kilometer radio telescope there as well. We will look at Nara’s Star. Her insistence that we go there is, well, unexpected.”

Naarah had previously told him all about Nara’s pronouncement about the star HD 156411 and its exoplanet system.

“Nara had even fussed at ARMIE saying that there were SIX planets, not FOUR that were known. I had to finally drag her away, promising her that I would do everything I could about ‘going there.’”

Jabin spoke up, “And you thought Atarah and I were crazy to go a mere half billion kilometers! Your granddaughter wants to go a couple of hundred LIGHT-YEARS!”

They both also knew that Atarah and Seth were still on that half billion-kilometer journey.

Jabin choked a laugh, “I think I have mated into a band of gypsies.”

Naarah scowled, “This is serious. We need to understand why Nara is like this.”

She continued, “I didn’t want to bring it up this way, but I had ARMIE produce a psych report on Nara...”

It was Jabin’s turn to scowl, “Nara is not…”

“Hear me out, Nara’s report was surprisingly, well, normal.”

“…except, for, the simplest term, ‘imaginative visualization.’”

“What does that mean?” Jabin asked, still uncertain about Nara being psych-evaled so young.

“Good question. Even ARMIE’s answer was… unusual. It said, quote, She can see things in ways we cannot, end quote.”

Raj sent an urgent message off to Eimi and Kimi. They opened a vid channel, even though it was late at night, their time. He saw the two, wiping sleep from their eyes. He ignored that they were in the same bedroom together.

“Sorry for the interruption. We have a portion of the message deciphered! I’m sending the data now. But the gist is a greeting and welcome along with several unknown mathematical formulas. It was so difficult because the languages did not have the math symbology in their alphabet. So they made up symbols. The formulas relate to gravity and spacetime. Details are in the attachment, but the rest is just several hypotheses, pure guesses if you ask me.”

He continued, “But there was one interesting point. The message contained details of pulsar coordinates. Basically, a ‘We are Here’ map. The astrophysics group is busy pinpointing it.”

Eimi and Kimi, too awake now to go back to sleep, poured over the small mountain of data and reports Raj had forwarded. They knew Jabin would want this. But more importantly, they had seen similar formulas from someone very close.

From Nara.

Abra sat buckled into her seat in the escape pod. Other than watching the feed from Atarah and the others, there was nothing to do. Her mind wandered back to Camber, her mate. They had only been together a short time before she had left on this voyage. She packaged a message up, again apologizing for leaving, even as she knew the mere fact of the apology would make Camber more upset than the actual separation.

“Abra! Quit that! You have been training for something like this your whole life. Aliens! SETI has succeeded. And it even looks like your thesis hypothesis was correct…”

She still felt so bad. Which is why she had egged Camber into going out with Jabin. Even though that didn’t turn out as expected.

She continued recording her message, “Camber, you know I will always love you no matter what happens. You have helped me so, all these years. And when I get back, I’m going to stay put. We will raise children, and you and I will grow old together. Ok, I admit, I’ll likely have a lifetime’s worth of work to do once we retrieve this artifact. But you can always visit me in my research lab.”

She laughed, then hit Send.

Jabin received a message from Eimi and Kimi asking him if they could visit him and Nara. They apologized for the abrupt ending of their last meeting and wanted to talk about Nara. He agreed that evening, right after dinner.

“Hi Nara, I’m Kimi, and this is Eimi.”

“You’re sisters! I wish I had a sister! A sister that looked like me!” little Nara spoke right up upon seeing them come in.

“And you’re EARTHERS! I don’t get to see many Earthers,” she added, not holding back.

Jabin rolled his eyes as the two young women smiled. They were dressed in more relaxed clothes this time, both in shorts and stretch tops, legs and arms bare, and their hair appeared freshly washed.

“Sorry for our look. We just finished at the gym and took a quick sono shower.”

Jabin noted that, even though they were slim and a few centimeters taller than him, their muscle and bone structure was demonstrably more defined than he or Atarah.

“How long have you two been up here?” Jabin asked as they all sat, with Nara now sitting on his lap.

Kimi answered, “About three months. Another three to go. Though, now we’re starting to like it here. Even meeting new friends.”

Eimi spoke up, “Nara, it is good to meet you,” she held out her hand.

Nara touched her fingertips to Eimi’s, a friendship greeting, but then looked down, looking tired.

“I’m sorry, but I have a headache from School. I like geometry, especially hyperspatial geometry now, but it hurts my head at times.”

Kimi asked, “Nara, how old are you?”

She looked quiet, “Four…” then upturned brightly, “…but I will be five next month!”

Kimi and Eimi looked at each other. Kimi had the briefcase from their meeting the other day. She opened it up. Holos appeared to one side of each of the women.

Kimi touched some points on the display, “Ok, Jabin, we are shielded from the City AI. I would like to mem record this, if I may. Nara, is it ok if we record your BCI while we talk?”

She looked up at her father. Jabin nodded his head. Nara accepted Kimi’s connect request.

“Ok, Nara, did you know that you are quite a few grades ahead on your mathematics?”

Nara nodded, not wanting to boast.

Eimi looked at the last report from School, “Jabin, she’s eight-year, that’s over two dozen math classes ahead. She’s already well past Calculus, but for some reason, School seems to think her abilities lie in the fields of hypergeometry. She will be in multiverse hyperstructures soon.

Kimi’s eyes widened as she looked at the data and then to Jabin.

“You, young lady, appear to be a mathematical genius.”

Nara slinked back into her father’s lap, leaning her head against his chest. Eimi flicked her wrist, and a holo screen with a summary report appeared in front of Jabin. It took him only a few moments to get the gist of the report. He hugged his daughter tighter as she closed her eyes.

“Jabin, we are sending Nara a calming mem. We want to let her mind relax. A meditative state. This will baseline her. Then we will give her a single problem to solve. Our portable AI will be comparing her thinking patterns to known mathematicians and savants as well as quantum math specific AIs. The mem will ask her to think about the problem she is presented with. She doesn’t have to solve it. This is to capture how she approaches problems instead.”

“Do we have your approval? If she doesn’t want to do it when we wake her, she doesn’t have to. The test will end.”

Jabin hesitated, never encountering such before, “If she doesn’t want to, then you drop the connection?”

“Yes,” replied both Kimi and Eimi, simultaneously.

“Before you begin, that message I sent earlier, about where ARMIE says that ‘WE’ answer questions that Nara has. Where someone, someTHING, has been feeding Nara Lessons while still in Nursery…”

Eimi spoke up, “Yes, actually, we have been examining that. This problem of ‘WE’ that City AI, ARMIE, has. There is a team at iAI test labs working on it. What we’ve found so far has been a process of elimination. It’s not a sync problem between computers. It’s not the clone AIs talking with City. It’s not a shadow or ghost subprocess. The only thing we know is, well unsettling.”

Kimi took over, “It appears to have started at the time, well, of when Cecilia Pilot fell in love. At the same time the message was created by Pilot. The same time that the anomaly with the mining team on 2 Pallas occurred.”

Eimi continued, “There appears to be some connection. We just don’t know what yet. That’s part of what we want to collect here. We are looking to see if this another connection.”

“There are implications, too. As you were previously aware. That instantaneous communications of these events, with no delay, even over light-hours distances.”

Eimi took a breath, “While she is resting, we have something else. Raj sent us a report decoding part of the message. Here is a summary.”

Jabin looked at the vid and holo pictograms and the formulas. It was obvious this was ‘First Contact.’

Jabin looked worried. Worried about Nara here and more worried about Atarah so far away, headed to the core of this enigma?

“May we begin?” Kimi asked quietly.

Jabin breathed in, “Yes.”

“This likely won’t take more than a few moments. We want her initial reactions. But they will be fed at her current velocity as School Lessons.”

She touched a button of light on the screen in front of her. Nara did one little shake in Jabin’s arms. Her eyes popped open, a smile across her face. Then her eyes closed and face scrunched up, concentrating. The tip of her tongue stuck out one side of her mouth, much like Atarah did when she was heavily focused on something.

Her eyes flew open, “THIS IS WRONG! THIS PROBLEM! WRONG!” she yelled out, nearly leaping out of Jabin’s arms.

Kimi immediately halted the test.

Jabin turned her to look at her, “Nara, honey! What’s wrong? Are you ok?”

“Daddy, yes, but that problem was WRONG! They had a positive where a negative should have been! WRONG!”

The two girls stared at Nara, mouths open, unbelieving. Kimi flicked the problem to Jabin. To him, it looked like a massive jumble of algebraic equations, hugely complex.

“This took three YEARS for our best mathematicians and AIs to locate that exceedingly subtle error. See down on the eighteenth line, about midpoint. She did it in thirty SECONDS!”

Jabin looked down at his daughter, now fast asleep in his arms, worn out by the effort.

Eimi took over, looking at the test report summary, “She looks at problems completely differently, almost outside of… well, reality. The maths aren’t numbers to

her; it's, well, look at this. I have to feed it to you via BCI. It’s, how to describe it… it is like looking at a masterpiece of geometric ARTISTRY!”

He was enveloped in what appeared to be a three-dimensional tapestry of colors, shapes, and sizes, hugely complex yet almost facile. Something caught his minds-eye, down low. He zoomed in. A little polygon that looked like a frowny face. The error. He laughed. Nara.

Svend made his way into the mining crew’s quarters.

“Things here are in disarray, not really unusual, more like people were here and just dropped what they were doing and left. Otherwise, nothing. I’m going to the Lab.”

Seth called out, “I’m headed your way. Will meet you there.”

As Atarah sat watching the vid displays from Seth and Svend’s cameras, Abra called out.

“Hey guys, did you feel that?”

Atarah answered, “What, Abra?”

“A vibration, like the asteroid shook, a quake.”

Seth replied, “That’s strange. This rock has been cold for eons. We never registered any activity here. Maybe a meteor impact? Seems really unlikely. We felt nothing here.”

Atarah replied, “Pilot didn’t report anything. Though, since you are on the other side, we wouldn’t have sensors on you.”

Svend yelled out, “What the fuck!”

“Svend? What’s happening?”

“Sorry about that, guys. I found that cube. It's floating in the middle of the lab, above my head.”

“Did you say floating?”

Atarah saw the vid feed from Svend. A small crystalline cube sat a meter above Svend. It was now obvious as it was glowing an off-yellow color, like a faded lamp.

“Apparently, it lit only as I came in, since we didn’t see it when the droid was here.”

Svend continued, “It’s just sitting there in mid-air.”

“How is that possible? Its mass is… well, far more than lead or even uranium. It would radiate energy, yet we detected none. I will be there in just a minute,” Seth replied.

“Good, I need another set of eyes on this. It’s so… weird!”

A scream!

“ABRA! WHAT HAPPENED? What’s going on? ABRA!”

“Help!” Abra calls out weakly.

There’s hissing, air rushing out, then silence. Radio transmissions cease.

“ABRA! ABRA! Dad, Abra is in trouble! I’m going after her!”

“Shit! Atarah, GO! We are ok here. I’m with Svend now.”

Atarah had Pilot plot a course around 2 Pallas to the other side where Abra was, with maximum burn. Atarah gritted her teeth under the sudden one-gee acceleration, six times lunar gravity, but her adrenaline pushed that uncomfort aside.

“Abra! I’m coming! Hang on!”

Jabin sat with Caare and Naarah. Nara lay asleep near him. He described what the two iAI techs had found about Nara. Also, about the linguistic analysis on the ‘message,’ the welcome, the formulas.

When Naarah saw the pulsar data, she requested to get the results of the location from Raj as soon as possible. As the two looked at the message data, Jabin continued.

“Eimi and Kimi want to examine the BCI records for Nara for all her School math Lessons.”

“You not sure about that?” Caare asked.

“That’s a lot of data. I don’t want them to turn Nara into a lab rat.”

“It is rather amazing what she can do, but I tend to agree. Nara needs to grow up more. She is very young for them to probe her,” Naarah whispered quietly.

“I will follow with whatever you decide, Jabin,” Caare reached and took her son’s hands.

“Maybe a compromise with them, mom? Maybe give a couple of her first Lessons and her latest one.”

“Yes, that makes sense. It gives them something to focus on. Maybe enough insight without turning them greedy,” Caare said, nodding.

Jabin sat in that iAI conference room, where he had initially met with the two analysts over a year ago. He fidgeted in his chair as they set up their workstation.

Eimi started, “Ok, Jabin, the security is on. This room is sealed from monitoring, though, I do have to keep a local copy of what we discuss, as you are aware.”

“Yes, sure. Not a problem,” he nervously offered.

Kimi smiled at him, “So, what is it that you wanted to discuss that needed this private meeting?”

“Ah, well, you probably remember… sorry, you are aware of the… incident, here at Armstrong several years ago. Concerning the Earther, no offense, the woman who was, ah, stopped by ARMIE from detonating a device…”

Eimi interrupted, “Yes, the eco-terrorist.”

“Yes, her. Ah, Faraja. She had visited me to fix her superpet.”

Kimi, “Yes, fortunate no one was hurt.”

Jabin looked at her, “Except for her.”

Kimi nodded, “Yes, except for her.”

“Anyway, I always wondered about that. I mean, ARMIE was designed to not harm humans, considering it has full control over all of our life support and the like.”

He hesitated about speaking out that ARMIE had killed her. Killed a human.

Eimi took over, “Jabin, yes. You are correct. It was… is a quandary. Without being able to give you details, I can assure you that we have spent significant resources examining that… anomaly.”

Kimi touched his hand, “We do feel for her. And we do understand your concern. However, I can say that the final results of the study were satisfactory to the highest levels of both the company and the government.”

“UG was involved?”

“Of course.”

He echoed, “Of course. Sorry, it’s just I keep thinking of her not as a…”

Kimi, “Terrorist. It’s perfectly ok. I can say that there was significant interest in how she was able to remain undetected. There were… irregularities, in her psych reports, only determined after the fact.”

Jabin replied, “Well, ah, my question was really concerning the effect of the event on ARMIE?”

Eimi, “Yes, unfortunately, we cannot discuss the specifics of the AI’s, but rest assured, we are well aware of the situation.”

She looked away from him and toward the holo in front of her, using the shift to hide her feelings. She was less worried about that specific event than what she saw in a much broader view of AI’s and ARMIE in particular.

Nara whimpered as she lay, still sleeping. Naarah stroked her face lightly. Jabin sat discussing some of the meeting with Naarah.

Nara moaned again, her eyes opening, “Mommy? Grandma Naanee? Something wrong! Mommy is sad! Someone hurts!”

Naarah looked at Jabin, “ARMIE, when was the last transmission from DragonII?”

“Telemetry data is still arriving. Note that there is currently a 34 minute light lag for all transmissions.”

Half-hour old data. That did not settle well with either of them.

As DragonII came around closing in on Abra’s location, Pilot violently rotated the ship and reversed, finally slowing to a hover just above the escape pod. Atarah was already out of the airlock before Pilot had completed the maneuver. She saw no lights. Even Louey, the droid, was dead.

“Abra! Abra! I’m here!”

Ice crystals were floating all around the outside of the pod where the atmosphere had vented, like a little snow cloud, slowly settling to the ground. Atarah saw a small hole in the pod. Then another. The droid had holes in it as well.

“Projectiles?” she said to no one, though Pilot acknowledged that it appeared to be so.

Atarah had to blow the pod’s hatch to get in. There was no power. No atmosphere either. Her headlamp shined into the four-meter diameter interior. Abra, in her spacesuit,

was still buckled into a seat. Frozen globules of blood were spattered all over the floor and her suit.

“Abra, I’m here!”

Atarah unbuckled her and pulled her out of the pod. She could see a wound on Abra’s side, frozen blood, and suit sealant. She got no response from Abra. She pushed back to DragonII, using her backpack to propel her and Abra.

Inside DragonII, she pulled Abra to the Auto-Doc and started removing Abra’s helmet and suit.

Pilot spoke up, “I’m sorry, Atarah. Abra is dead.”

Atarah ignored the AI, refusing to believe its dry prognosis. She engaged the Auto-Doc for resuscitation and full life support. Suddenly, there was a scream of air, hissing. Then immediately, the entire ship bucked, and Atarah was thrown against the bulkhead. They were under full thrust. The door to the Auto-Doc pod shut automatically.

“Oof! Fuck! Pilot! What’s happening?”

Pilot threw up holo screens of damage reports, “Atarah, it appears we have been struck by projectiles, similar to what hit the Cecilia. Currently, I am taking us perpendicular to the direction that the projectiles came from. It is now apparent that there is a weapon that fired at the Cecilia, and not random from interstellar space.”

Atarah, tears and shock from this, “Abra! Abra!”

“Atarah, please strap in. I may have to do maneuvers that could injure you. WE MUST PROTECT YOU!”

Atarah could barely move from the ship's floor, finally getting to the couch beside the Auto-Doc, where Abra’s body was still buckled in. The Auto-Doc had stopped its efforts. Atarah looked at poor Abra, still unbelieving that she was gone.

The DragonII surged, tossing Atarah to one side.

“The weapon has fired again. It appears that it is tracking power sources, but also that its own power source is decreasing, or its armaments are running out. We appear to have been hit by no more than six projectiles. There is a hard vacuum in three compartments, but self-sealing appears to be holding. Thus I will restore the atmosphere as soon as we are clear. Evidently, the weapon is at a fixed location in space. Thus now that we are rounding the asteroid, it no longer has line-of-sight.”

Atarah’s mind ignored all of this. She sat frozen, staring at Abra’s body.

She finally whispered, “Dad.”

Until the DragonII returned closer to the mining base, they were out of the suits' communications range.

“Atarah, we wish to know if you are ok. We can tell you are physically well, but without BCI access, cannot tell your mental wellbeing.”

Atarah looked up at nothing in particular, eyes clouded with tears streaming down her face from the gee forces.

“Fuck my well-being! Abra’s DEAD!”

“We understand and are very sorry. We only…”

“WE, WE, WE! What is this fucking WE stuff!?” she was angry, angry at Pilot, at herself, at Svend, at agreeing to leave Abra alone, to die alone.

“We are we...”

Pilot went quiet for a moment, “The DragonII is within range of the base.”

“DAD! DAD! Can you hear me?”

There was no answer.

Xvxsg had floated through space in the same orbit as the asteroid ever since the asteroid had been perturbed into its highly inclined location eons earlier by the coming of its ward. It had used a fair fraction of its available energy to slow its interstellar journey and match that orbit. Its purpose was Protector. But there was nothing to protect its ward from, except for the stray meteoroid that happened by every few thousand years. Nevertheless, it knew the Enemy was out there somewhere. More eons passed. It’s energy slowly ebbing over the thousands of years.

The small cylinder of Xvxsg waited.

Then one day, a brilliant source of energy appeared. Then another and another. Its own energy nearly depleted, Xvxsg was reduced to tossing its darts, armor-piercing in nature, at the annoying energy sources, not the Enemy. It would have used more potent weapons, but too many millennia had passed. It fired its dwindling supply of darts. Some effective, some not. It did not dwell on its successes or failures.

Xvxsg returned to its task of guarding its ward.

Atarah hurriedly left DragonII, headed for the mine airlock. She passed Dewey still on station in front. As she cycled through the lock, Pilot sent her a message.

“Atarah, we have located the position of the weapon by triangulation. It will be visible over this location in less than one hour as the asteroid rotates around. We must stop the weapon from harming Atarah.”

She ignored Pilot’s notice, focused only on her father and Svend. She repeatedly called with no reply. She shoved through the tunnels bounding off ceilings, walls, and floors.

“Dad! Svend! Where are you? Please! Dad!”

She made her way into the Lab, the last place she knew they were. She froze…

Naarah double-checked the information she had received from the astrophysics organization on Earth. It was indisputable.

“Jabin, can you come to my office?” she called over her comm.

“Sure, what’s up?”

“You need to see this.”

A few minutes later, Jabin tapped on her open office door.

“Come on in, look at this.”

She pulled up a report and pointed to the celestial coordinates. To him, it didn’t seem much.

“Ah, Naarah, I don’t understand.”

“You know I told you about Nara and her insistence about a particular star, actually a particular exoplanetary system?”

“Sure, yes. Though Nara really hasn’t mentioned anything much about it. Oh, except for one time when we watched a vid on Proxima Centauri and planet Tuomi, you know, Centauri B. She asked if they could name her planet after her ‘when you find it.’”

Naarah blinked, “Jabin… I found it.”

It was his turn to stare.

“Somehow, she knew it was there. Somehow the information, decoded by the linguistics team on Earth, contained the location, using pulsars to guide us.”

Naarah paused. She pulled up the latest images. The final one, enhanced but still blurry, showed something unexpected.

“Jabin, there’s something wrong with it. Nara’s World has something strange around it.”

“Nara’s World?”

She smiled.

Atarah feared to look at the two spacesuits that were just standing deadly still as her headlamps flashed across the frost-covered lab. Both stood facing… Facing that crystal cube, suspended just above them, glowing a faint yellow, almost like a candle. One of the suits' arm was ever so slowly falling back down as if it had been reaching for the cube. She held her breath and went around in front of them.

The suits were empty. One, the one with the arm floating down, was Svends. The other… her dad.

Both gone. Nothing.

Atarah shook, standing in disbelief. Had she lost EVERYONE? Was she ALONE out here?

She called to Pilot.

Pilot responded, “Atarah, you must stay there. We are going to protect you.”

She was in too much shock to understand its words.

Above on the surface, Dewey suddenly started moving towards the DragonII. It latched onto the side of the craft. Rock fragments and dust blasted away in a cloud of asteroid debris from the DragonII’s engines' violent backwash. Pilot veered on a course towards the weapon’s location at 110% maximum acceleration, overriding the safeties, no longer worried about human cargo.

Xvxsg detected a new energy source. It computed the trajectory. The source was coming at it, but its delta-V was puny. Had Xvxsg had more energy, it would have just sent a particle beam or a fusion siphon at the energy source and maneuvered out of the path of any debris. As it was, all it could do was fire its needles. It loaded its final burst, a mere few dozen. It needed to wait until its ancient capacitors fully charged before firing. It also wanted to be sure the trajectory did not change, so it waited for the energy source

to get closer. It felt no danger from the source, too puny. But its duty was to protect from such. It knew not what the Enemy looked like. Maybe it was less a threat than expected.

Pilot deviated its flight several times but always returned to a collision course with the weapon. Pilot used active radar, now that the weapon was no more than a few thousand kilometers away. Pilot overrode the safeties on the atomic that Dewey still carried. It left Dewey in sleep state power level in case the weapon tracked energy signatures. Pilot knew that DragonII would be a much bigger target.

Xvxsg was ready to fire but waited to see if there were any more evasive maneuvers. With so few needles, it needed accuracy. At this range, the needles would travel the distance in mere seconds.

Pilot released the droid and its bomb and performed a hard bank away. Xvxsg thought it strange to maneuver away when so close, almost deciding to hold its fire. It didn't. The last of its needles were away. Had Pilot known that the weapon was now impotent, its actions would not have been necessary.

Dewey woke in the last few seconds, adjusting its tracking slightly. At one kilometer, it detonated the atomic.

Xvxsg saw the tiny machine only at the last moment. Again, if it had energy, it would have shielded itself from the blast that came at it microseconds later. The atomic explosion of heat and radiation stripped the super dense alloys and sent plasma into its interior. Xvxsg turned itself off before its internals were made molten.

Pilot felt the impact of the projectiles on the DragonII. Out of all of the impacts, only one proved critical. There was no chance for it to SCRAM the reactor this time.

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Nara woke, crying. Crying for her mommy. She felt sad. Not from her loneliness of missing her mom, but from her mom's sadness.

"Nara! What are you doing up? What's wrong, honey?"

Nara bounded to her father's arms as he sat up in his bed.

"Mommy! Mommy is in trouble!"

"No, she is fine. Don't you remember talking to her yesterday?"

"No, no, NO! She is sad. Something wrong!"

"How do you know?"

She paced back and forth, urging her father to do something, though she did not know what. She only knew something bad was happening to her mother. Jabin finally quieted her, saying he would check if she would go back to bed.

Jabin went in to contact Blue Ion and the telemetry group monitoring DragonII.

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Marcus had just lain down to go to sleep. He had to get up early to journey to Farside to oversee the upgrading of a radio telescope there. The door chimed. And again. He groaned, put on a robe, and went to answer the door.

"Camber?" he saw the young woman with an older man, an Earther. It looked like Camber had been crying.

The man spoke first, “Doctor Tompson? Sorry to interrupt. I am Emery Weber, head of security at Blue Ion. May we come in?”

Marcus led them to the main room and offered chairs as he sat on his couch. He looked at the two of them. Camber wiping tears away.

“Doctor Tompson, Marcus. I hate to bring such bad news, but this is never easy. There has been… an anomaly,” Emery sucked in a breath, “Your daughter, Abra, has been…”

Camber cried out, “She’s dead! Killed. Some kind of accident.”

She jumped up and fell into Abra’s father’s arms, hugging him, needing to be held. Marcus sat frozen, slowly putting his arms around her, stunned by the news, staring at Emery as he sat glumly. His daughter, dead?

“That’s not possible! I just received a message from her a few hours ago; she was fine, lonely, apparently sitting as a backup for the others,” his voice trailed off.

“Sir, the Blue Ion team received messages from DragonII AI. We are still assessing the information.”

He didn’t elaborate further. The details were too sketchy and unexpected.

Blue Ion lost telemetry from the DragonII. This time, the technicians hesitated to say anything, particularly to Atarah’s mom, until they could get confirmation. But the messages concerning Abra were clear. She had been killed by some type of projectile. Projectiles that appeared to be similar to the ones that hit the Cecilia years earlier.

“We will, of course, keep you informed as we know more. We have lost contact with the DragonII and are working with the United Government Security team and others to determine what has happened.”

After Emery left, Marcus and Camber sat together, in shock.

Atarah stood unmoving in the mining Lab, unable to accept all that had occurred in these last few hours.

She whispered to no one, “What happened to ‘skedaddle’ daddy?”

She ignored the crystal cube still suspended above her. She wanted nothing to do with it. She wanted to be at home. Home with her mom and her dad and her Jabin and her baby Nara.

A warning tone sounded. Her suit. Low oxygen. She had been standing there now for the better part of a day.

“Pilot?” she called with no response.

She looked at the atmospherics around her—oxygen breathable. The base integrity was still in place. She took her helmet off. Cold, still well below zero. The cold air shook her from her shock.

“Damn, girl, do I have to rescue myself again? DAD!” she cried out into the frozen silence, “DADDY!”

Nara was pacing back and forth. She was in no mood for School. She was in no mood for anything except her mommy. Something was wrong. Mommy needed her. She changed out of her sleep clothes and put on her slippers. It was late, actually early, very early in the morning. Her daddy was still asleep. She had snuck out of bed from him and then out the door. Where to?

“ARMIE, where is grandma’s lab?”

ARMIE guided her there. Nara climbed up onto the stool she had sat before.

“ARMIE, can you show me the asteroid?”

“Which asteroid, Nara?”

“THAT ONE! Um, two pallas. Use the BIG telescope! The BIGGEST! It’s an EMERGENCY, ARMIE! Hurry!”

The technician at Farside was surprised when the 150-meter ULT left its original target and started moving to a new location. He called Lyka, waking her, asking about the emergency override.

“No, nothing that I know of. Where did the command come from?”

“Ah, it appears to be from Armstrong, ah, Dr. Naarah’s office, again.”

“Naarah? Strange, she always calls me first. Let it continue. I will contact her.”

Naarah, still in her pajamas and wrapped in her favorite shawl, came into her lab.

“Nara! Nara, what are you doing up? And what are you doing with the telescope? How did you do that?”

“LOOK! Mommy’s in TROUBLE!” Nara pointed at the screen.

The image, frozen, showed two bright balls of light near an obvious round body, an asteroid.

“How did you get this photo?”

“It just happened. Mommy is in TROUBLE!”

There on the screen were two obvious atomic fireballs, not far from 2 Pallas. Naarah froze. She, too, felt something was wrong. Very wrong. She immediately contacted Blue Ion to find out about the DragonII status. They were shocked when she called, as they had just seen the telemetry drop out.

“Nara, how did you know this?” now Jabin and Naarah, with Nara, all back at her home.

“Mommy told me,” the little girl looked down, answering quietly.

Jabin looked at Naarah. How did Nara know that something was wrong? More so, how did she know exactly WHEN to look. A few seconds earlier, and there would have been nothing remarkable. A few seconds later and the blasts would have been gone. And that was on top of adjusting for the light travel time of nearly half an hour.

“Nara, sweetie, how did mommy tell you?” Jabin asked, reaching for her.

Nara looked incredulously at her father, “That’s NOT important! You NEED to do SOMETHING! Mommy NEEDS HELP!”

He picked up Nara, still squirming in his arms.

“ARMIE, tell them!” she squealed.

“Contact with the DragonII has been lost. We need to protect Atarah. We need to send a fast rescue ship.”

“YES! Daddy! We need to send a very fast ship! Mommy is all alone!”

Naarah spoke up, “Alone? No, Seth, Abra, and Svend are with her.” Even as she spoke their names, something did not feel right.

“No, grandma, no.” Nara started crying, “Mommy is alone.”

Day 1

Atarah sat in the mining control room. She saw that the asteroid rotation would bring Luna above the horizon in a couple of hours. 2 Pallas completed one ‘day’ about once every eight hours. She was still in shock, with no word from Pilot in several hours. She looked down beside the console. There was vomit frozen on the floor, hers.

“Shit, you would think I’d have a better constitution than this by now.”

“Double shit, I’m talking to myself already after just one day. Fuck Robinson Crusoe.”

She replaced the O2 bottles on her suit and went outside onto the surface.

“Pilot, come in! DragonII from Atarah, where are you?” she repeatedly called with no reply.

Huey was there, “I have lost contact with Pilot.”

“Ok, I give. Hello, Huey. Or should I call you Friday?”

“Hello, Atarah. Pilot sent me here to be with you. We are here to protect you,” Huey, now Friday said over her radio.

“More We stuff?”

“I am sorry. I do not understand the question.”

“Well, damn, might as well come in. I need to send a message in about an hour.”

Huey broke the news that it believed that DragonII was destroyed. Atarah had to replay the droid’s video and telemetry data before she could accept it. Her body seemed detached from her as she reverted to her survival training. She knew that what lay ahead would be a severe test of her ability to stay alive. Alone on an asteroid, millions of kilometers from home.

“Friday, I have to get that message out.”

Before going back in, she checked on the power pack capacity. She already missed having Pilot just tell her the status of things. She had to calculate the remaining time. At the current usage, it would be out of power in about four weeks, maybe less. And then she would be dead soon after, frozen. She had to reduce power requirements!

As soon as she went inside, she felt her loss again. No Abra. No Dad. No Svend. No Pilot. No DragonII. She sat on the roughhewn rock interior of the mining camp, leaning against the inner airlock door. She wanted to give up. Her eyes grew heavy, exhausted from stress, she fell asleep. She dreamed.

She floated on her back in a pool of water, something she had never done. Her daughter was there, too. Laughing. There was an ocean, an ocean of purple water. The sky was red and yellow. There were towers off in the haze, too far to see detail. Above, a gigantic ring arced from horizon to horizon. Her father waved to them. Atarah called to her daughter, come Nara, come to me. Nara called out, ‘We need to go! Granddad is waiting!’

Atarah was woken by the droid tapping her shoulder. She had only been asleep for twenty minutes.

“Oh shit, Huey, Friday… You scared me.”

“We need you to send a message. You must be protected.” She heard over her suit’s radio.

“Looney fracking Moons! You should have protected my friends, my father!”

“I am sorry, Atarah, we must…”

“Yes, yes. Protect me. Well, you can protect me by preparing the transceiver.”

She went to the control room and sent her distress message.

Devon floated to his boudoir in the back of his billion credit hyper-yacht, the ‘Kaleisha.’

“Ah, my sweet! Time for some fun with your Devon!”

He had a rather young girl, giggling and very naked, head peeking out of his, now her, cocoon bed.

He started removing his clothes, “Did my sweet like her yummy Jamaican meal?”

She giggled and nodded her head.

“And Devon’s special blend of ganja?”

She giggled again and held out her hand, urging him to come to her. He deftly floated to her, taking her delicate fingers, kissing them as she pulled him closer. He swung around and slid himself into the covers with his latest girlfriend.

There was an interruption.

He looked up, “Oh, Astrid, I hope l'intrusion est importante!”

“Monsieur, there is a message. From someone named Jabin, on the Moon. Concerning an Atarah?”

“Oh HO! Atarah! I do remember!”

Astrid forwarded the message to him as Devon untangled himself from his latest, who looked sullen and no longer giggled.

He leaped out of bed, “Astrid, please send Miss… Lyre, back to Mars Station! We must prepare for high burn AT ONCE! We have a damsel to rescue, mon Amie!”

Jabin wasn’t too pleased with the idea. When Bebe over at Blue Ion had heard that Atarah was again in trouble, stranded on an asteroid in deep space, she knew that there was only one person that had a spacecraft capable of getting there in time. The fastest hyper yacht in the solar system. Likely the most expensive as well.

But Jabin wasn’t going to quibble over Atarah’s previous ‘Sowing Oats’ encounter with its owner… at least not yet. He had to rescue Atarah. But as usual, it seemed he was never in the position to do so himself.

Naarah felt his pain, “Jabin, I know. We need to tie that girl to Luna! Every time she seems to go out into space, something happens!”

Nara sat antsy, squirming in Naarah's lap. Naarah wiped Nara's tears as well as her own.

Jabin formulated a reply to Atarah.

After sending her message of despair and loss, Atarah sat crying, curled up into a fetal position, and lying on the control room floor. Its coldness provided no comfort. The droid stood idle in the corner, watching but doing nothing.

Day 2

Atarah woke hungry and thirsty. Her bladder wanted attention as well. Her face felt horribly cold. She still wore her spacesuit but without the helmet on. The suit said it was only 10 degrees above freezing though the walls around her were still frozen solid. She stretched, muscles ached from lying balled up for hours. She wiped still wet tears clouding her eyes.

"Dad? Abra?" she called out forlornly.

She turned on her suit radio, "Droid… anything happen while I slept?"

"No, Atarah, other than you have messages waiting."

She leaped up, nearly hitting the ceiling, slid into a control seat, and buckled herself in. 2 Pallas's gravity was so low, she could fall out with the slightest turn otherwise. She brought up the vid display and played the messages; from Blue Ion saying they had lost telemetry from DragonII, from Planetary Resources providing her instructions for a number of the systems running the base along with a long list of questions. But it was the messages from her mom and Jabin that were the most important.

Despite being incongruently full of worry and relief, seeing their faces helped bolster her, even while they were so far away. She would have to send a reply to Jabin to stop being so hard on himself. He couldn't help it that he wasn't here with her. She reminded him that he had to take care of Nara, and had he been here, he too, might have been 'disappeared.'

Her mom's message was more problematic. Naarah had explained that before they had heard from her, Nara had seemed to know. She was the one who alerted them to something happening. Naarah also had said that Camber and Abra's father had already been told about poor Abra from the messages Pilot had sent. Atarah could tell that her mom was fighting to keep control over her own feelings of loss for Seth, knowing that at the moment, her daughter was still alive but stranded so far away.

Atarah replayed the messages over and over, just to see their faces, to hear their voices, only finally stopping after nearly an hour.

"Dad! Dad! Where are you?" Atarah sat, staring at the blank screens.

Jabin had told her that they were going to come after her. To rescue her. To hold on, don't give up.

Atarah sat. She needed to formulate replies but felt nothing, dead, inside. It was only the droid's reminder that Earth-Moon would be soon above the horizon for another radio transmission that shocked her into finally creating another round of messages. She cried to Jabin, then deleted the message, then told him that she would stay strong and would

he send some heavier clothes; it was cold. She also sent Nara a message to be brave, and that mommy would come home to her. To her mom, she fought again to keep from crying, saying she would do everything she could to hold out for rescue as well as try to learn what happened to dad and the others.

She was exhausted by the emotional rollercoaster of just creating those messages, so by the time she remembered to answer Planetary Resources' requests, it was too late for this cycle. They would have to wait. She looked at the questions. Most were life support related. They, at least, would give her something to do.

Atarah found that, other than power, everything in the base was in working order. The time in deep cold did not seem to affect anything, nor did the… thing… in the Lab. Whatever was going on, something had just drained all the power everywhere. It also made all the people, including her father, disappear. She stayed out of the Lab, more for the ghost of her father and the desire to not confront whatever that alien object was.

The loss of DragonII and Pilot stung again. The telemetry told her what happened. Pilot really had sacrificed itself to save her. Though, she wished she had been able to have done something. Everything happened all at once. She would have probably ordered Pilot to 'skedaddle' instead of diving straight in. She had been safe in the mine base and was in more danger now than then. Hindsight is always 20-20.

Day 3

Atarah found plenty of self-heating meals in the mess hall, though all the water was frozen and had to be thawed to be drinkable. The head was frozen, too. Its pipes burst, so she was reduced to using a bucket and wiper cloths. She quickly discovered that water splattered widely in the low gravity, requiring her to wipe herself and all around the buckets every time she went. But at least it soon froze.

The next set of messages arrived with great news. A ship was already preparing to head her way. She laughed aloud when she discovered her rescuer would be the Jamaican, Devon, in his hyper yacht.

"Well, Friday," she looked at the droid, "Looks like we have a rescue party coming… in six weeks! But I guess that's not bad."

She began the task of shutting down all the nonessential equipment, including reducing heating, bringing the temperature in all but the control room to well below freezing. She would have to stay in her suit most of the time. The replication printer took too much energy, so she just ate the ration packs left from the mining team. Even they had to be partially thawed before their self-heating would work.

The droid seemed to follow her around like a little puppy.

"Friday! Please, why are you following me all the time?"

"We have been tasked to make sure you are protected."

"Ok, droid two, override program. Remain here."

"I am sorry. We cannot allow that."

"We! We! Who is this We? Yes, I know… We are we," she sighed.

Day 8

The loneliness of isolation was starting to get to her, even after a few days. To her, this was worse than on the Cecilia. There she had Jabin and had been busy nearly

twenty-four hours a day. Here, she had a robot, a freezing set of tunnels, and ghosts with an enigma still floating in that lab.

She scrounged supplies, hauling them to the control room. Otherwise, there wasn't much to do. She slept most of the time, waking with nightmares and crying for her lost father and her friends. She stayed out of the crew quarters, only getting some blankets and having to use their clothes. She felt she was stealing from their ghosts.

Her 'Friday' followed her on each journey through the base. Including when she had to go to the head. She finally convinced the droid to give her privacy, even if it did not understand. The low gravity was just barely enough to make hygiene livable, but she didn't care much what she did. She had the droid chip ice from the water storage into a bucket and bring into the control room to thaw over a warmer plate she had located.

The cold, gray walls of the base felt like she was living in a dungeon. All that was missing were rattling chains. But every creak of a cable, every crack of ice fracturing a rock, made her jumpy and scared. Knowing that over two dozen men and women, along with her father and Svend, had just vanished, filled the tunnels with phantoms.

"Friday, I sure could use Svend's dry sauna now. I am cold to the bone. Svend, I miss you, I miss Abra. I'm going to build a sauna when I get home and live in it!"

She strung extra lights in the control room just to ward off shadows. Brightening the one room made it seem warmer, not caring about the few extra watts of electricity.

She discovered a music player that one of the miners had thus old town country music echoed through the chambers. She hated it but wasn't picky anymore.

Day 12

"Atarah, it is time for another transmission."

She had the droid calculate when the asteroid rotation brought the Moon into view, which occurred several times per Earth day. However, she only prepared messages as she felt up to it. Most of the time, she just had the droid send back status telemetry data, that is, 'Atarah is still alive,' 'Power consumption down X percent,' 'Temperature at negative X degrees'…

She had told Jabin and her mom, (and everyone listening, another minor celebrity moment she wished she didn't have), that she could only spare transmission power once per week. Still, Blue Ion said they would monitor every cycle in case of an emergency. As if they could do something about it.

When she complained about her messages being open to news agencies worldwide, the droid reminded her it could encrypt them. After cussing the droid for not telling her previously, then cursing herself for not thinking of that herself, she sent encrypted messages to Jabin and Nara.

"Jabin, fuck, sorry, I'm stir crazy here and cuss a lot, mainly to myself, ok, to Friday, too. Fucking droid just sits there. Sitting here right now. I did find a set of playing cards and taught it to play poker… shit! What was that sci-fi movie of yours? That one with Huey, Dewey, Louie? My mind is crap. It's so cold. I miss yelling at Pilot. This droid doesn't speak, except by radio. I turn it off except when I have to. Oh sorry! I'm wandering. Oh, I love you so! How do I end up like this? Next time… shit. Dad! Where are you?"

She breaks down crying, “Oh, sorry, shit. Atarah! Pull yourself together. I hope Nara isn’t listening to this, to her mommy babbling... Ok, like last time, the next message will be just for Nara. And I promise to keep myself together… and clean. Did I tell you I love you? Ok, bye, my love, put Nara on next.”

She paused and took a deep breath, “Oh, Nara honey! Mommy will be coming home soon. I love you so! Are you doing good in School? I heard some nice ladies were talking with you and daddy. And that you were doing really good in math. That’s nice. Are the ladies pretty? Sorry. You know, at night when I sleep, I dream of you. I can’t wait to hear from you, and I can’t wait to get home to you and give you a big, big hug! Bye, my sweetheart! Put your granny on, ok, darling?”

She wiped her tears away. They stuck to her eyes, clouding her vision, gravity insufficient to have them fall down her cheeks.

“Mom,” Atarah started crying again, “Sorry, sorry, shit, I wasn’t going to do that. I miss you! I miss Dad! I don’t know where he is! They are just gone. You keep Nara safe for me. And Jabin. I miss him. We should have never…” she stopped, she didn’t want to go there again. Spilled milk, “Mom, why does Nara keep talking about a star? What is so important about it? Shit, I really need to examine that artifact in the Lab. I just can’t, not yet. If I had the memory blocks Svend recovered…” she stopped.

If she had the memory blocks, she could at least get some idea of what happened to the mining team and maybe her father.

“Shit! Mom, I’ll call you back. I thought of something. Sorry, love you, bye!”

“Droid, Friday, acknowledge. Shit, turn on the radio, Atarah.”

“Droid, do you have the memory blocks still?”

“Yes, Atarah.”

She screamed at herself and no one else.

“Please give them to me.”

She reinstalled them into the computer console and powered it up, ignoring the extra power drain.

Jabin fretted over their decision not to send the robotic probe with its high-gee capability. She wouldn’t be able to come back in it, but they could have resupplied her. But then Blue Ion had given them the bad news. The probe was now located near Venus, resupplying another mission team. It would have arrived at the asteroid after the hyper yacht anyway.

He sent messages to her every day, trying to keep her spirits up. The base receiver didn’t need much power, so Atarah told them she would leave it on. Only transmitting took significant energy. Jabin sent status updates from Devon that he was pushing the Kaleisha and their bodies as hard as possible. He would just plead for her to hang on.

Neither Atarah, Blue Ion, nor Jabin knew about the UG Security group sending a military reconnaissance probe at high gee from Earth. But it wouldn’t matter to them anyway. It had no way of rescuing Atarah, nor wouldn’t even be bringing supplies.

Atarah saw from the vid recordings that the cube had been inert when it was initially located by Karal and her team. The mining team had moved it to their lab using a mining robot. They ran passive measurements at first, then active. Karal noted the holographic atomic structure and sent that fateful message to her father. That was the last they heard from the team, but the recordings continued. First, they noted that the cube had begun to have the faintest glow. Then their electron spectrograph failed. They were going to have a droid move it to another instrument, but as soon as the droid touched the cube, its power failed, drained. Then someone touched it and the recording stopped. Even the fusion reactor had been quenched.

"Friday, my friend. That was a LOT of energy! A fucking lot!"

Unfortunately, that was the end of all the data. Nothing showed what had happened to the team. She shut down the computer and removed the memory blocks, and gave them back to the droid.

Day 14

Atarah decided to visit the site where the cube was found, just to get a sense of context and for something to do. The recording strangely did not show any details of where it was found other than its location.

The site was only a couple of kilometers away. She reloaded her suit with supplies taken from others. She, with the droid plotting the course, took off. Bunny hops in the low gravity were many meters long, though, no danger of 'escaping' off the surface for good.

She had to override the droid's original insistence at her staying put in her control room cocoon. She convinced it by saying she was going insane sitting here and that she was leaving, period, end of discussion. It was not a lie.

Outside, she looked around the mining camp. Equipment was scattered all around. She saw a Boston Dyn mining robot, just like those that helped save her life on the Cecilia. She closed her eyes to keep from crying again. Last time, no one had died. This time, everyone had disappeared, might as well be…

"Fuck, Friday. I don't want this! We should have let UG and the corporations send security teams or just robots. I lost everything."

The droid just sat there.

"Damnit, Friday! You are supposed to tell me that I was stupid and that I have a mate and a baby to care for. And that I was supposed to talk my father OUT of coming here instead of talking him INTO taking me along."

Silence.

"Yes, yes, I know he HAD to come. It was his team. And I HAD to come because… because of the alien artifact. The one that has tried to kill me… twice now! But fuck it! I am STILL HERE! You hear that, you bastard aliens! You haven't beaten ME!"

The droid said nothing.

She started again, heading in the direction the droid had shown before she had her rant. They picked up their pace as she got used to the far lower gravity. The exertion took her mind off what was in the past. Before she realized it, she spotted the dig site.

“Ok, Friday, let us see what we can find. Maybe there’s a magic cave where my father and all the others are waiting for me to rescue them.”

At the site, there was no cave. And even less than she had hoped for. Other than lots of boot prints, anchors and cables, and a hole a meter or so in diameter and a dozen meters deep, there wasn’t much to look at. She had the droid climb into the small pit and clear away the loose rubble that had fallen into it. It worked for nearly an hour as apparently, the mining team had partially reburied the excavation for some reason.

“Atarah, there appears to be something here.”

She swapped places with the droid, almost having to lie face down in the hole to get a good view.

“What is that?” she swept away some dust and dirt that kept falling into the pit.

The droid replied, “It appears to be fused silica, melted and then hardened.”

Atarah’s fingers traced an outline of a square hole, likely where the cube had set. It was evident that the cube had been surrounded in the melted regolith, now carved partially away by the mining team.

It was as if the cube had just appeared there underground, incredibly hot. Hot enough to melt rock for meters in every direction. No crater on the surface, but as she looked up the hole, she could see that this thing had slowly melted its way down, almost like laying a hot iron onto a piece of ice. Apparently, it had cooled by this point, and the molten rock turned to glass.

Suddenly, an alarm went off, warning of 20% oxygen left.

“Shit! I thought I had checked that. I should have had nearly 12 hours worth.”

“Atarah, yes, but it has been 7 hours since we left the control room. You also have been exerting yourself more than expected, thus using extra oxygen.

She looked totally surprised, “Seven hours? No! How? Damn, Friday, aren’t you supposed to be protecting me? It’s going to be cutting it close.”

The droid continued, “Your suits seals are also likely leaking small amounts. It was not meant to be lived in for extended times. We need to return as quickly as possible.”

“Now you tell me! Some protector.”

The droid grappled her leg, pulling her out of the hole before she could complain.

“Please, Atarah, climb on my back. I can move faster, and you will not exert yourself as much.”

She didn’t argue.

If anyone had been around, they would have seen what looked like a kangaroo with a spacesuit on its back as the droid hopped across the surface of the asteroid.

Day 21

Another week went by. Without a change in the lighting, no sunrise/sunset, and almost always in the control room, days blurred into a string of eat, sleep, pee, poo, repeat.

She had watched the power dwindle, looking at its disheartening report once per day.

“Shit Friday, how much power do you have left?”

Normally, droids were plugged into their cubbyholes on the outside of the DragonII, recharging there.

“Atarah, 21%.”

“Ah damn, Friday, please go into sleep mode immediately. We still have... three weeks? Well, I guess I won’t have my lapdog following me for much longer.”

“I am sorry, Atarah, I cannot. We require monitoring you for your protection.”

“Dammit Friday, I’m not going anywhere, and I can’t recharge you. Please conserve your power. If you don’t, you will run out and cannot monitor me, you stupid machine! Fuck, sorry, you’re not stupid. I’m stupid for coming out here in the first place.”

“I will reduce my power consumption. But we must protect you.”

“Who is this damn ‘we’?”

“We are we.”

She had heard that more times than she wanted. Never an answer, though.

“Well, whatever,” she didn’t feel like fighting more.

If the machine wanted to use up its power, well, tough. She once more turned on the control screen for the status of the power pack running the base.

“Geez, can’t a girl ever get a break?”

The power pack would run out in under two weeks. Could she survive in the deep cold for a week? Hypothermia would set in. And at something like the -70 below before, it would happen really, really quickly. She gathered up all the blankets and supplies she could and piled them in the control room.

“I ought to move that crystal here as well. After all this, I am NOT going to leave it behind.”

She sat thinking for a moment. That alien artifact. Why it? Why here in this forsaken place? Why not conveniently on the lawn of UG headquarters? OK, maybe not there. But there had to be some better place than this.

“Maybe it traveled a zillion klicks only to run into this hunk of stone. Sure, girl. Aliens always like a mystery. At least they didn’t try to eat me.”

Her thoughts downturned. It HAD eaten her dad and Svend and all the rest. After they touched it?

“Fucking hell! So how do we move the crystal without touching it? Its mass is too high, so I guess I can’t just blow on it. Atarah, think, girl.”

As she thought about that problem, she needed to get back to work on gathering supplies.

“Well, Friday, let’s get this girl to work. Those blankets aren’t moving themselves.”

. . . . . .

The UG military probe decelerated at ten gees, coming to the point in space where DragonII’s Pilot had relayed the location of the alien weapon that it had destroyed. It scanned the area for debris, spending several weeks in an ever-widening spherical spiral in its search. A hit was finally detected, just before its search was to end. It matched delta-v with the husk, having been accelerated away from 2 Pallas by the atomic blast.

The probe scanned the casing in extreme detail, hardly larger than a couple of oil drums. It attached a location beacon, plotted its orbit, and relayed the data to UG

military headquarters. Other than the super-dense hull of the alien device, nothing else remained.

The probe turned its attention back to the asteroid 2 Pallas, approaching first the site of the escape pod that Abra had been killed in. It imaged the area in high-resolution, collected samples of blood that had freeze-dried to the pod's interior. It also retrieved a single dart, embedded deeply in the asteroid, drilling it out of the rock.

The probe then headed to the site where the cube was initially dug up by the miners, collected samples of the regolith glass, and then onto the miner’s base. No one was there. It found little of interest but imaged everything inside and out with its remote droidcam.

After several more weeks of scanning the asteroid, the probe began its high-gee burn home. While a slower robotic tug was dispatched from Earth to eventually retrieve the ten thousand kilo alien husk.

Day 23

The control room was packed with stuff now, blankets, buckets of ice that were slowly melting, extra oxygen from the spacesuits, and food supplies. She no longer wanted to go outside the mine. The airlock took power, and she did not feel like manually cycling it. Exhausted, she laid down on the blankets and stared at the ceiling. She thought of Jabin and her, in the empty equipment room under Armstrong City, lying on the insulation blankets, back before they were mated. She giggled to herself, remembering how heated they had gotten, unfastening clothes, nearly to their underwear. She could feel his fingertips run over her body.

She snickered, “Jabin, I could sure use some of your body heat right now. And a nice warm shower. Oh, and Svend’s dry sauna. And some decent food. And my Nara. And my mom and dad. And hot cocoa. And… Sigh, all of that sounds so good right now.”

She realized she was sweating in her spacesuit, helmet off, from the work of gathering up all the items and maybe a bit from her thoughts. Sweating in cold weather is not good.

“Fuck, I’m taking this shit off for a while, Friday.”

She wiggled out of the suit, the cold air chilling her, now in just in her jumper.

She took her jumper off, “Pew, stinky! I do need a shower!”

She looked over at the water, still mostly frozen. The little warmer pad took a long time. It was barely above freezing in the control room, and she started to feel it now that she was naked.

“Ok, buster, what are you looking at?”

The droid just sat.

She took her jumper and dipped it in the ice water. She had to conserve… that’s drinking water. She wiped herself off, very quickly, and tossed it to one side. She picked up one of the miner’s jumpsuits. It was nearly frozen stiff. She sniffed it.

“Well, Friday, better take one more look at this fabulous body, ‘cause I don’t think I’m doing this again.”

She was hopping in the low gravity, shaking her arms around her trying to get some heat. She dare not increase the control room heater, as it was the biggest power drain. She put on another jumpsuit over the first. She felt colder now than when she had been nude.

“Didn’t Crusoe have a fire?” she wondered if she could burn something.

“Yeah, right, Atarah, just what you want. Didn’t your boyfriend try fire before? How’d that work out? Nearly burned down the science fair with his model volcano and got himself kicked out.”

Finally, the clothes started feeling warmer. She put on several pairs of socks, but the boots were too frozen stiff. She looked at the two spacesuits she had collected. Both were really big for her. She hated the idea of putting hers back on. So just tried more layers.

By the time she was finished, she looked like that old commercial, Stay Puff? Michelin? Snowman? Whatever.

“Oh, RATS!” she made a face.

“Damn, Friday, you’re supposed to remind me about stuff. Now I need to pee!”

She looked forlornly over at the bucket in the corner, her potty.

She giggled, “Nara would probably get a kick out of seeing mommy peeing in a bucket.”

She sighed. She missed Nara.

Jabin and Naarah sat at the kitchen table, sipping cups of tea. Nara was asleep after Naarah had brought her back from School. Nara nearly always fell asleep for several hours while her mind recovered from the influx of new Lessons, still given at a velocity that was far above the norm.

“Jabin, I’ve been holding off saying much about this with you, concerning Nara, knowing how worried we are already about Atarah.”

He put down his cup, his attention shifting his thoughts away from Atarah and her plight.

“You know Nara has very amazing mathematical abilities. Much of her interests there seem to be focused on that star and its planets.”

“How is math involved in that? Just a star and exoplanets, nothing really that radical?”

“She seems to be trying to come up with a formula, a calculation, needed to traverse spacetime.”

He looked at Naarah, “We know how, interstellar travel, even have maths for calculating exotics like wormhole traversals. But nothing within our abilities.”

“That’s just it, she’s outside of that, no wormholes, no faster-than-light, not even regular space ships.”

“Here,” she took a sheet of paper, marked it with a dot, and folded it in half.

“We’ve always thought of spacetime was like a sheet of paper, pressing three dimensions into two, just for ease of representation.”

He spoke up, “Yes, and if you poke a hole through it, that represents a wormhole. Everybody knows that.”

“Yes, of course, the wormhole is poking through three-dimensional space in reality. But that’s not what Nara’s early math work is starting to show. It’s a lot weirder. Spacetime, that is.”

“Quantum realm?”

“Likely,” she wadded the paper into a ball, “This is what Nara’s seems to show. Spacetime is folded into a jumble, a ball, very tight ball.”

He looked at the ball.

Naarah added, “And we are at the center of the ball.”

“That’s unlikely, isn’t it? Center of the Universe and all?”

“Wait, I’m not finished. Imagine this ball is seething, roiling, and that EVERY spot is in the center of the ball. Remember, this seething is outside of our three dimensions. Anyway, her idea appears to show that to travel from point a to point b, that wormhole never physically goes anywhere. Like a blackhole squeezing smaller and smaller. You work out the right boil of the folds, and bingo, you are gone from here and appear there. Zero time required.”

“No tunnels? Like those space movies?”

“No tunnels. Our version of time just doesn’t exist there. It solves entanglement, too. The particles are not really separated. They just look that way to our spacetime. Actually, they are the same particle, just different aspects.”

“What about ripples in spacetime? Wouldn’t all this folding and boiling overshadow such ripples?”

“Remember, all those folds are outside of three-dimensional space. Ripples ‘inside’ three-dimensional spacetime have nothing to do with this. They are fine. Stars, galaxies, black holes colliding, that’s all inside, too. They don’t pierce or even get affected by this, well not entirely, gravity, quantum energy, stuff like that does. Call it multidimensional leakage.”

“This is heavy theoretical stuff! How could…”

“How could a little girl figure this out? Well, she really hasn’t. That’s what seems to be bugging her so. She keeps complaining that she needs to be older, that she needs to know more maths…”

“Ok, still…”

“Wait… I didn’t finish. She says she needs someone, someone she says is coming soon. A sister.”

Day 28

Atarah sent a message again to Jabin and her mom and, of course, to her little Nara. She had a dream about Nara again. It seemed so real, but their surroundings, that purple sea, the sky with its strange tubular ring, and tantalizingly, her father waving in the distance? With Nara insisting for them to go to him.

Atarah told them this was likely the last message as power was nearly gone. She would conserve everything and hang on for rescue. Telling them she would not give up and for them to not give up hope.

With nothing to do, she slept fitfully, waking only to satisfy her bodily needs. Days had no meaning. She didn't bother to track them anymore. They were all the same now. To keep sane, she would sing herself songs and try to recall everything about her early years with Jabin, snickering to herself at how, well, horny they had been. She also thought about Nara, from that very first time meeting her, right off the Aries shuttle from Earth. How proud she was. How scared she was to hold that barely one-year-old baby. How she and Jabin made faces and funny noises and said that her little eyes looked like Jabin's, and her little nose looked like hers. She laughed to herself the first time they had to change Nara's diaper, wanting to do it themselves and not use a nanny droid.

Atarah drifted off to sleep again, thinking of how many nights they had been awakened by Nara's cries.

"Mommy gets lots of sleep now, baby."

Day 30?

The power failed. Everything went dark while Atarah slept. She was so tired. Cold. Hungry. Dehydrated. She couldn't eat any more of the food. The self-heating barely got the stuff above freezing. She would just suck the liquids. She was back in her spacesuit, with the helmet on as much as possible. The temperature was hovering around minus 10 in the control room, minus 40 outside in the tunnels, and still falling. She held one bottle of oxygen in reserve for when rescue came. WHEN it comes, not IF. She couldn't refill the others again, even though there was plenty. The filling system needed power that was no longer available. Still, she had managed to force a valve open, so it constantly leaked oxygen into the tunnels. Better than nothing, she figured, and it wasn't enough of a flow to overpressure anything.

"Friday, are you still with me?"

There was no answer. Same as for the last several days.

"This is only for six weeks. But damn seems longer," she laughed, coughing and watching her breath frosting in the air, the room dimly lit by her spacesuit's light.

Atarah talked to herself anytime she could gather the energy, shivering and teeth chattering. She lay curled up most of the time, buried in the blankets as the temperature continued to fall, and the air grew stale.

Day 35?

"Ok, girl, I don't know if I can make it this one fucking week. Power is gone. Been gone for nearly a week now. I can't even record anything. I'm going into that lab to that crystal. I'm just going to throw a fucking blanket over it and drag its ass here. If it makes me go poof, well, so be it.

Atarah put on her helmet, opened the control room door that hadn't been opened in two weeks, and left.

Devon groaned as the Kaleisha shut down its three-gee burn, flipped 180 degrees, and threw on full burn again, now slowing them for rendezvous with 2 Pallas.

“Oh, the Gods be merciful to poor old Devon!”

Astrid smirked, “Yes, poor old Devon.”

She flipped away the status screens and just laid back, closing her eyes to relax. Devon looked anxiously at the barf bag sitting in its console pouch.

To him, the pressure seemed relentless. But he knew they were cutting weeks off the rescue time by enduring this. He watched the latest vid transmission from Jabin and Naarah, repeatedly thanking them and forwarding him snippets of Atarah’s latest messages and status. Seeing her face looking so tired and worn, she seemed a totally different person from the little teenager he remembered. It hadn’t been ten years ago, but she looked far older now. He pulled up the rendezvous countdown, disheartening, so he waved it away.

Sitting on a control couch beside Devon, Astrid smiled, “You were the one that wanted to come to her rescue. So quit complaining.”

He turned his head without lifting it off the padding and made a face at her. Astrid seemed unaffected by the weeks of high gees. Likely because she worked out every day. He preferred to just watch her. So he was paying for it now. Though, he was determined to rescue his Atarah, ok Jabin’s Atarah. He only hoped they would not be too late.

“But don’t worry, the next break is only two hours from now. You’ll have an entire thirty minutes of a mere one and a half gee for lunch and rest. I will tuck you in your bed before hitting full burn again.”

“Astrid, you know you could join me…”

She laughed heartily.

As soon as Atarah stepped into the lab, she knew something was different. The cube was there, so was her father’s and Svend’s suits, now lying on the floor, finally fallen, likely in the slight draft. She noted some clothes on the floor as well. Strange to leave clothes lying about in a lab.

She hadn’t been in here in five weeks now. But something… felt different. The cube floated just above her head, unmoving. Its dim yellow glow lighting the room. She was too cold and too tired to worry about her feelings. She had decided to do this, and there was no going back.

She took a breath, tossed the blanket over the cube.

Nothing happened. The blanket covered it, dimming the glow. The cube stayed unmoved. She pulled. Nothing happened. It did not move. She tugged harder. Nothing. It was as if the blanket was tied to an anchor embedded in the wall.

“Alright, you piece of shit, MOVE!”

It moved towards her.

“What the fuck!”

She tugged on the blanket. Nothing. She pulled and pulled, then slipped and ended up pulling the blanket off as she fell.

“Shit, shit, SHIT! Ok, ok, I gotta get rid of the potty mouth WHEN I get out of this. I’ll corrupt my daughter otherwise.”

“Ok, please, pretty please, MOVE!”

It moved towards her. She backed up, and it followed. She turned and went out into the corridor. It floated serenely out, now lighting the tunnel with its soft yellow glow. She paused for a second, thinking to say bye to her daddy, but something told her that wasn’t him. Just an empty suit, exactly what it was.

“Good little crystal. Keep following sweet little Atarah.”

She made her way back to the control room.

“Damn! Is this thing putting out radiation? Atarah, your brain is getting too slow.”

She looked at her suit’s rad detector.

“Ok, little cube. You don’t seem to be putting out any gamma or, for that matter, nothing but that weird glow… and whatever you use to levitate. Come on, might as well come in my home away from home.”

Nara worried as she laid in her bed, “Mommy wants to fall asleep! Mommy can’t, else she won’t wake!”

Jabin had put her to bed and kissed her forehead an hour earlier. She had almost fallen asleep, but then she felt it. Her mommy was very cold and very tired and wanted to go to sleep.

She fretted. What to do? She closed her eyes tight, concentrating, focusing on her mommy.

“Mommy! Mommy! Wake up, mommy. Don’t sleep! Don’t sleep. I will stay awake with you! Sing to me, mommy. MOMMY, WAKE UP!”

“Mommy, you will NOT fall asleep! NO! NO! NO!”

Nara repeated over and over in her head. She could see her mommy, dimly, distantly. She focused her thoughts on just her mommy. All her own thoughts dropped away. Only thinking of her mommy and for her to stay awake.

Day 39

Atarah knew all the warning signs. Her mind was lethargic, confused. She shivered much of the time. She couldn’t even cuss straight anymore. No one to cuss at, so she didn’t even speak. Hypothermia setting in.

She felt so cold, so tired, so alone. Only the glow of the cube lit the room with its pale, sickly yellow glow. It, too, seemed weaker to her, though the room seemed warmer. The temperature now hovered just below freezing. But she only wanted to go to sleep. To sleep... sleep...

She felt a thought come to her.

“Nara?” she croaked. Must stay awake. Sleep means death. “Nara, I hear you, honey, mommy hears you!” she cried for her baby.

She fought to stay awake. So hard. Tired… Nara. She started to hallucinate.

In the corner of her closed eyes, a warm yellow glow appears in the rose gray colored sky. Below her are purple ripples like waves of a sea. She is floating above the ripples. Her mind now feeling her body’s desire grow inside her. Fingers and hands are against her. Touching, kneading, manipulating her. The yellow light, like a haze covered sun, hovers over her belly. A fingertip reaches from the light and touches her, below her navel. It feels warm, filling. The other fingers and hands continue massaging her without reacting to the yellow light finger, as if unaware of its actions.

Atarah feels warmth, love, heat inside her, the finger filling her.

Nara stirred in her father’s bed. He was still awake, just watching her sleep. She had woken from a dream where invisible people with invisible hands were touching her, stroking her softly, lovingly. She had called out to her mommy, but her daddy answered, coming in and taking her to his bed.

He had watched her in the previous day as she seemed so absorbed at times with her math studies, so young but as determined and headstrong as Atarah had ever been. He missed his mate so much and constantly worried about her still waiting for rescue. Would Devon get there in time? He had not heard any transmissions from Atarah in over a week. He sent more messages to Devon to hurry. If the power had failed, Atarah could freeze to death.

He looked again at Nara, pushing his fears away for her sake. She stirred.

As she woke, she called to her daddy, wanting to be held. He did.

Nara smiled at Jabin and whispered.

“I have a baby sister!”

Devon’s Pilot circumnavigated the asteroid, positioning itself at the mining base. They were finally released from the yacht’s three-gee burn.

“Astrid, mon Amie, that was some slowbaby trip. I think every bone in me do ache. I will need ya fine hands on my body to massage moi!”

“…But FIRST! We rescue our sweety Atarah!” Devon said, not waiting for a response from Astrid and excited to actually be here.

They donned their spacesuits and took a droid out with them. After manually cycling through the mining base’s airlock and into the dark tunnels, they made their way in.

“Oh, Astrid! Are we too late? It’s colder than my icy beer here. But at least there is atmosphere. Let’s go lookin’ for my gyal!”

They had a map of the site and the droid led the way as it flooded the tunnels with its lights. They had been told to go to the control room.

He pushed at the door. Frozen.

“Ah, my lovely robot, try your luck!”

The droid pushed against the door. It dug its legs into the tunnel floor and hit the door. The door burst wide open with a loud crack.

Atarah heard a noise. She was too weak and cold to open her eyes. Her head was wrapped in cloth torn from blankets, now frozen to her. Frostbite covered her face, even though mostly hidden by the fabric. Her fingers and toes were frostbitten, too. The suit had kept the rest of her body from freezing, but with the lack of food and water, she was unable to move when the control room door swung wide and the room flooded with light.

She heard what sounded like French.

Devon looked around at the piles of blankets, debris and tossed off food trays covering the entire floor. Neither of them could see anything that looked like a human.

“Atarah?”

He heard a croak. She was buried under a pile of torn and dirty clothes and blankets, all frozen stiff. They dug her out, breaking her free from her encasement.

Devon picked her up, as light as a feather in the low gravity. She whispered before passing out.

“Bring the droid… don’t touch the cube. It will follow.”

They made their way back to the surface, Astrid leading, Atarah carried by Devon, his droid hauling poor Friday, and all being followed by the strange, yellow floating cube.

Jabin had given orders to Blue Ion and Planetary Resources to contact him any time day or night as soon as they heard from Devon and Atarah, good or bad. He would not stand for them delaying.

Each night, he fell asleep with little Nara beside him. The two had become nearly inseparable these last few weeks, and he made sure he did not dismiss anything she said. She would talk in her sleep, strange words mixed with little moans, sometimes carrying on short one-sided conversations. Most of the time, he could not understand what she said, even when her words were clear, nor why she said them.

The strangest dream was that she seemed to be talking to Atarah about an ocean and clouds and Atarah’s father. He initially assumed it was a story or mem recording, but he was not so sure anymore. He had tentatively discussed this with Eimi and Kimi once. They suggested setting up a BCI monitor while she slept. It might capture something. Usually, a mem of a dream was just flashes of scenes and feelings, emotions. The subconscious did not record well via BCI. Eimi had mentioned that more could be obtained using a special AI that ‘directed’ the dreamer. However, Jabin was very uneasy with doing that to such a young child as he knew the results could be quite disturbing.

Then the news came that he had been waiting for. Early one morning, he was awakened by an incoming message from Blue Ion.

Atarah had been rescued! She was aboard the Kaleisha with Devon and Astrid.

Moments later, Nara padded in, rubbing her eyes of sleep.

“Mommy’s safe,” she stated matter-of-factly, then crawled into his bed and fell back to sleep.

“Ah, my sweet! She awakes! My humble self is at your service!”

Atarah could only whisper, still lying in the Auto-Doc.

“Devon, you are really here. Though, I might be in worse trouble now!” she laughed, groaning as she did.

“The cube?”

Her eyes were blurry, and the view was blocked as the Auto-Doc worked to repair her frostbitten face, hands, and feet.

“Oh my gyal, your yellow companion follows like a little ruff, ruff. It be just floating over ya beautiful, but rather aromatic body.”

“My suit? My clothes?” as she realized she was undressed.

“Do not worry, we have stored your… well-worn garments sealed away. And you are shielded from prying eyes. My Astrid did all the deed. You are safe and snug in my Auto-Doc.”

She smiled at his accent, glad to hear a human voice again. She fell back asleep.

When next she woke, feeling stiff and still tired, “Devon, where are we?”

Devon was staying by her side, acting like a worried father. She again realized her own father was gone, so was Svend, and poor Abra. She hated the thought of Camber, back home, losing her mate after such a short time.

“My sweet child, don’t you cry. Devon will take care of you and get you home as quick as a wink.”

“How long?”

“Well, my girl, you are so fragile, and our journey is so far, it’s still more than three months…”

“OH!” more tears came to her eyes.

She missed Jabin, Nara, and her mom so much. She needed them.

“But Devon has a way, if you don’t mind, come with me. The Auto-Doc says it can wait now to finish, letting you heal for a bit on your own.”

Atarah climbed off the Auto-Doc, with his help. She found she was dressed in a slip made of silk and satin. She also realized it was the only thing she had on as Devon lifted her and carried her to his bedroom. The cube following overhead. She put her arms over his shoulders as they went.

“Do not worry, my sweet, this bed is special…”

“I bet,” she murmured with a little sarcasm.

“Oh no! Devon be a fine gentleman when he need. No, this bed is an acceleration couch. If you allow me, we can increase from our current half-gee to maybe one or two with you here. While you rest and sleep, we move faster!”

He laid her gently onto the bed. Almost immediately, she felt it adjust to every curve and pressure point on her body. After the Auto-Doc, it felt like a cloud.

“You just lie back and rest. Now, if you will accept a BCI connection, Devon’s AI can help with the aches and pains of your pretty body.”

She looked worried, “But… Pilot?”

“Oh, no, my gyal, this is not a cloned AI. My special custom work. She not allow access from outsiders.”

“She? I should have known,” Atarah laughed weakly.

“Close your eyes, accept the connection. Chérie will help you.”

Atarah smiled at his AI’s name, Chérie, meaning Darling. She accepted the connection and her mind blanked. There was no scene, no trees or flowery fields, only soft color. The world was a single shade of pink-gray, strawberry mousse, shifting slowly towards lighter cherry blossom, then dusty rose. The colors continued to slowly change.

She felt as if she were being turned over, lying on her stomach. She felt a little heavier, but the curve of the bed adjusted. She felt a masseuse’s hands working her aching muscles, working on the back of her neck, slowly down her spine, down her arms to her hands and fingertips, then over her hips and buttocks, continuing down the backs of her thighs and calves and finally to her feet and toes.

Unknown to her, the ship smoothly accelerated past one point two gees, over double their original acceleration and nearly eight times her normal weight. It then continued up to two gees as the bed adjusted.

Atarah’s mind felt herself being turned over, now on her back. Her weight seemed heavy, but the massaging and soft colors, now a pink quartz, helped. She felt the warm, strong hands massaging her neck, turning her head, then down across her chest, carefully avoiding too much breast, over her belly and pelvis, then diving over and between her thighs, sliding downwards over calves and feet and toes.

She felt the hands repeating the massaging, but this time, it felt like her whole body was being massaged at once. Hands were all over her body, both sides simultaneously, including her breasts and down her delta. Her breathing deepened. Her mind felt calm, relaxed, but her body started to respond to the sensuous feelings that ran over her. Her breasts felt tender. Warm softness was everywhere as if dozens of hands were softly touching her. The ones between her legs caused her to unconsciously widen them as if to allow them room. Her hips rocked lightly in response to the fingers there, as they moved in familiar patterns. They quickened as she thought about them, wanting them to continue. They responded to her need, her desire to touch her breasts and her sex, something she had not felt in months. She edged closer to her cliff.

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Nrkv watched over The One for a full cycle, long enough to be assured that the zygote had successfully been modified and implanted. Its energy now depleted with its last verification. It touched The One’s mind, providing the electro-chemicals that make up the constituents of that emotion of a mother’s love, guaranteeing The One will eventually accept Its fate. Thus it completed its mission to the best of its current capacity.

She dreamed of purple seas and red/yellow sky. Her toes clenched on the green beach sand. Her body rushed, and she felt pleasure wash over her in excitement. She felt something stir inside her belly, something she did not know was possible.

Atarah felt relaxed, with the colors in her mind darkening into grays of blustery sky, navy gray, iron ore, then charcoals. Her eyes, still closed, were heavy. She fell asleep as the original massage began again, softer and more remote this time.

Nara begged her father to take her to the café. She had the day off from School, and he had taken off from his work.

"PLEASE! Mommy SAID that you would take me for ice cream!"

Jabin looked at her, "Now, don't lie. I know she didn't say that."

She looked down at her feet, "Well, I know she would have if she were here now."

"Silly girl, ok. Yes, we can go for ice cream. BUT only after you eat your supper. Including the vegetables."

Nara thought about it a second and then realized her mommy wished she had vegetables to eat while on 2 Pallas.

"YES! I will!"

He picked her up and carried her to her room to get her little shoes. He decided to eat at the café instead of at home. He, too, needed a break.

Even though he knew Atarah was safe, it was still many weeks before they would be reunited. He knew that it will be a bittersweet homecoming for her.

At least Nara seemed so much happier now. It was as if she knew all would eventually be well. Even Eimi and Kimi seemed satisfied for the time being with Nara's Lesson data he had provided them.

But he didn't know that ARMIE had taken an interest in his future daughter. And was creating a plan.

Atarah woke and felt a deceleration, the AI detecting her waking and smoothly dropping back to the half-gee point. Hungry, and she needed to pee, she opened her eyes. The cube sat silently overhead, now just a dirty yellowish color, barely glowing at all. She rose, feeling a little sore but not bad. She looked around. The bed was empty except for her. It was unruffled as if she had slept soundly, without moving. Yet what she had felt during the night, just a dream? Was it all just a dream? She rubbed her belly. It growled, reminding her.

Holding onto a handrail of mahogany wood, likely real, she tentatively took a few steps, regaining her balance after lying for so long back at the base, in the Auto-Doc, and in the strange bed. The cube silently followed.

Grumpily, "Stop following me, cube!"

She turned and continued off. To her surprise, the cube stayed behind, motionless. She found the head, more of a marble masterpiece than a spaceship bathroom. One wall shifted to become a vid mirror, lighting her reflection perfectly, and to her chagrin, showing a face that was still in serious need of the Auto-Doc. Later… wash and eat first. She was still wearing the simple slip but saw no other clothing. After a quick sono shower, she put it back on and padded out to the rest of the ship.

Atarah located the bridge. Large screens showed a sweeping vista, a starry sky, obviously image enhanced, as thousands more stars than could be seen with the naked eye were visible. Even larger nebula were shown in crisp, colorful, glowing detail.

Astrid swept away several holo displays that had been in front of the acceleration couch she was seated in.

“Ah, Atarah! Glad you are up and about. We were worried for a bit.”

That was the first time she had heard Astrid ever say anything. Her voice had a Nordic accent, like poor Svend.

“Thank you, I feel better. And thank you ever so much for rescuing me. I don’t know how much longer I could have held out. If it wasn’t for my daughter…”

She paused, ‘Daughter? Nara? Had that been a dream, too? Her daughter scolding her about falling asleep back in the cold control room?’

She rubbed her belly.

“Devon was most pleased that Jabin had contacted him. He was happy to help. Oh, Atarah, you are probably starving! Here, let’s get something for you.”

“How long was I asleep?” she had lost all track of time.

“You were in the Auto-Doc for nearly two days, then asleep for over twelve hours.”

“That long! I need to contact Jabin and my mom!”

“Don’t worry, we sent messages that you were safe and recovering. You need to eat first.”

The galley looked like a chef’s kitchen, nowhere near the mess of the Cecilia… or the DragonII. She wiped a tear away. Abra and Pilot.

Astrid started off slowly giving her breakfast things, “You shouldn’t eat too much or too quickly.”

But the taste of eggs and pancakes and bacon (replicator-grown this time), and slices of bread with jam and cream were hard for Atarah to resist. She had cleaned all the plates by the time Astrid had slowed her down.

“Astrid, ah, last night, I had this dream, well, rather erotic,” she placed her hand into her lap.

“Oh, Devon! He forgot to turn off that part of the mem program!” she tisked, then closed her eyes briefly.

“There, I have disengaged it. I am very sorry and apologize for Devon and his… ways. I hope it did not cause you too much duress?”

“Ah, well, it was unexpected. There was one thing…”

Suddenly Devon made his entrance, “AH, MY SWEET! She is awake!”

He came to her taking her chin in his hand, turning her head this way and that, examining her.

“Oh, we must put you back in the Doc for a little bit longer. Mustn’t leave your pretty face marred by your experience! Let me see your fingers… and toes!”

He took each hand, again examining her fingers. Then he had her lift her legs one at a time, examining her toes as she tried to keep her modesty in the short slip that she still wore.

“Good! Good! Your beautiful fingers and toes are doing well! Soon they will be as kissable as ever!”

“Now stand! Stand!”

He took her hand, raised it over her head, and then spun her slowly around as his gaze followed every curve.

“Oh, Astrid, you need to feed this girl! She be getting thin! But so grown up since I last saw her. Jabin is a lucky man, and I hear you have a little one?”

“Yes, Nara, she’s almost five now,” Atarah’s face turned down, sad.

“My sweet Atarah. We must hurry you home! You need to spend much time in my bed so we can speed you back!”

Astrid interjected, “He means we can accelerate while you are in that bed. As you have seen.”

“Oh sweets, Devon will be a perfect gentleman. He sleeps in the guest room. Though, it will be a long, tiresome trip…”

She blushed, “Devon, I just wanted to thank you, I don’t know how I can ever repay you for all this.”

“Oh my sweet, it is I who wishes to thank you for letting me rescue you! Oh my, let me free you so you can get back to your breakfast! Astrid, feed this poor starving goodaz. We need her fluffy by home!”

“I just finished…” though Astrid sat a bowl of dried fruit and nuts and refilled her drinks.

She sat drinking tea, orange juice, and water as Astrid set out breakfast for Devon.

Between bites, Devon talked about all the light goings-on, delicately not asking anything about her ordeal or her lost father and friends.

Soon, he finished, “Ah, my hataz, I must take my leave and medi for a while. After you finish, come join me in the workout room. We needs to put some muscle on them bones of yours!”

With a flourish, he was gone.

“Astrid, I would like to send a message home. Also, ah, any clothes?” she blushed again, knowing Devon’s gaze of her.

Astrid laughed, “Clothes! Not a problem.”

She brought up a holo screen that had a model that looked like Atarah, showing different outfits.

“I see Devon has my size,” she giggled as she went through the selection, looking for something simple and not too revealing or elaborate.

Eimi sat looking at the latest School report on Nara, particularly the results of the test problems they had given her.

“Did you see this?” Eimi pointed to a graph on the holo.

Kimi sucked in a breath, “Yes, it’s as if her brain is… wired for this math.”

“You mean, is being wired.”

She nodded, “By?”

“By who or what, you think it’s that ‘We’ in the AI’s?”

The two women sat looking at each other.

Only a few hundred meters away, little Nara sat beside Naarah.

“Grandma, what’s this?” she pointed at some math formulas on a vidscreen.

“Nara, oh, that’s just to predict orbits of exoplanets.”

“You mean planets around my star?”

Naarah looked up, turning her attention to Nara.

“Yes, honey. The star you pointed out.”

“Did you find my planet?”

“Nara, we’re still gathering data. My grad students are looking at it. But yes, ‘Nara’s World’.”

“Did you see it?”

“The planet? Yes.”

“NO, NO, NO! IT!”

Nara hung her head, almost afraid to correct her grandmother yet again.

She whispered, “It’s wrong.”

“What, honey?”

“This,” she pointed to a particular part of the formula.

“This doesn’t fit. See…” she consulted ARMIE to find the name of the symbols.

“…this, tau, should be positive. And this, mu, negative, they’re backward. You’ll never see it with this!”

Nara was getting excited now, “And you MUST! MUST see it! NOW! HURRY!”

Naarah picked up Nara, sweeping away the screens, but not before mentally noting the changes.

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Atarah completed her workout while Devon smiled and joked as he pressed her to keep up with him. This time he was actually working out for a change.

“Come my gyal, you mustn’t fall behind poor old Devon! He be lazing along waitin’ for ya.”

“Hey, I’ve been through a tough time, Devon. I’m still recovering! And anyway, look at you, sweating!”

“Ok, ok, Devon take it easy just for you. You doin’ fine. Lookin’ fine, too.”

She glared at him, “You promised…”

“Ok, ya got Devon there. We be finished anyway. I’ll leave you in peace, my peche!”

“Stinker!”

He laughed his signature Jamaican laugh as she freed herself from the aerobics bot.

She excused herself and then went for a quick sono shower and change from workout sweats to her simple loose-fitting and rather bland jumpsuit. She headed to the bridge, finding Astrid there.

Astrid offered, “Atarah, you don’t have to lie in that bed the entire trip. Feel free to join me here. These couches also have acceleration features. Devon just likes to kid, and well, likes his women in bed.”

“He is quite something. Are you and he?”

Astrid laughed, “Oh, no! I am just his employee. He is far too free loving. He is happy to mate with all the young women and a few young men!”

Atarah knew there was more than just that between them, so she only replied with a nod.

“Here,” Astrid brought up a vid screen for Atarah, “You can record your messages. I will leave you in privacy.”

Seth gasped a breath. His eyes blinded, only seeing blurred white and dark. He was hit with dizziness as if he had just stepped out of a mixing bowl. He fell to the floor, feeling like a colossal weight hit him. Every muscle in his body ached. His skin burned and stung. His ears rang with a high-pitched sound drowning out any other sounds. He vomited, and his bowels emptied.

Someone… something, picked him up, washed him, and cleaned the floor. Warm air dried him. It laid him on a bed. The bed reformed to the contours of his naked body. He felt touches, stings as injections and fluids were given to him. His eyes were examined. Instruments probed his ears, his mouth, his body. He heard muted sounds.

It was saying something. It sounded like “Welcome.”

He passed out.

Atarah spent another day in the Auto-Doc as it repaired her face and gave her electrolytes. She was exhausted and went straight to bed afterward. Again, the ship’s AI activated the bed’s acceleration features. This time, the massage stayed professional. The ship accelerated as she slept.

Atarah stood on a green beach by a purple sea. She could hear Nara laughing and happy. She was playing with a younger girl. The two traded secrets. Haze covered the distance in a yellow/grey fog. Towers or buildings were ghosts in the mist. Something huge arced overhead. She heard her father call to them, barely making out his voice. Far away.

Atarah woke with a start by a great noise; a boom rattled the room she was in. She couldn’t move due to being sunken into the bed as it wrapped and protected her. She looked up towards the ceiling. The cube was gone. Suddenly the ship decelerated, and both Astrid and Devon seemed to appear out of nowhere.

“What happened? Atarah, are you alright?”

“Mon amour, did my sweet fall out of Devon’s bed?”

They saw that she was still lying there as it readjusted itself back to normal.

“No! I was awoken. There was a loud bang. The cube!”

The three of them looked to one side of the bed. There on the floor, its plasmetal dented and cracked, lay the cube, now clear. No longer giving off any glow.

“Ah! Sweet maad! It looks to Devon that your little cube be tired. It ran out of power, me say.”

Astrid leaned down.

“Astrid, DON’T TOUCH IT!” Atarah yelled.

Too late, her fingers ran over its absolutely perfect surface. Nothing happened.

“It’s weird. It feels like nothing. Like my fingers can’t quite touch it. It’s neither hot nor cold. It’s very slick.”

Devon added, “And it make quite a thump when it fall!”

Atarah, “Sorry, I thought. My father. You might disappear, too.”

Devon nodded his head, understanding, “Ya mon, I think it's asleep, may-may?”

Astrid tried to push it. It didn’t budge.

“We will need to go on the float and have the droid move it somewhere safe. Sure wouldn’t want it to go crashing around. It must be nearly a hundred kilos!”

Jabin and Atarah traded messages nearly every day. The journey back would take over two months even with high-gee as they traveled a wide elliptical route to reach the Moon. They had been on board now for over a month, with still nearly five weeks to go. Turn around was just days away.

She sent the scant information about the cube back, but this was a luxury yacht, not a laboratory. Jabin told Atarah about Nara, not only her surprising gift of mathematics but also of things she talked about and her dreams.

“Atarah, I didn’t want to worry you yet more, but Nara keeps talking about this certain star, insisting that we need to ‘go there.’”

He stopped himself from laughing, “It’s only a mere hundred and eighty or so light-years away! Wanna go when you get home? Anyway, Nara also said she dreamed of a beach, with purple, green, and yellow. You were there… and your dad,” his voice tapered off on that last part.

Atarah blinked, not quite comprehending, her own dream? The message continued.

“…Ah, she, ah, also said something about a sister. Maybe just wanting a sister, something from friends possibly, but she insisted she already had a sister. I have still resisted having a psychological study via her BCI. I would rather wait until you were home. Not unless something else changes. I love you, and miss you more than ever.”

She sat, staring at the blank screen. Only that morning, she had woken feeling sick again. She had assumed it was from the high-gees during acceleration. She left the control room back for the kitchen.

“Morning, Atarah. You look a little pale. Everything alright? Want some breakfast?”

Atarah looked at her, the color fading from her face. She jumped up and threw up into the sink.

“Atarah! We need to get you to the Auto-Doc!”

Seth woke in the bed. He groaned. His whole body felt pressed and beaten as if he had been in a fight. He turned his head. A strange-looking woman was standing by his bed.

“What?” his mouth felt like cotton, “Where are we?”

His eyes ached. His ears still rang with a high-pitched noise.

“You need to rest. The bed is similar to what you refer to as an Auto-Doc. It is restoring you after your journey and building up your strength for the high gravity of this world.”

“Svend, others?”

He was more worried about them than about himself or his surroundings, but his strength was giving out.

“They are…” muffled words “…rejoin soon. Rest now.”

He fell back asleep.

He awoke again, unable to tell how long it had been. The worst of his pains seemed to have dissipated.

Svend was sitting in an unusual looking gray chair, “Well, how do you feel?”

Seth still could barely talk, and sounds were still muffled and ringing.

He croaked, “Better. Heavy. How? Where?”

“Yes, this is apparently a high gravity world. Our hosts haven’t been terribly forthcoming. I think they are just letting us recover. I guess I was better off with my Earther body,” he laughed.

“Hosts?”

“Well, they are… human… like. They seem strange. They speak Anglo-Slavic, but it’s obviously not their normal language. They seemed to have learned it from… observing us. They also appear to be able to communicate… directly… without a BCI. Oh, don’t try to get up yet.”

Seth had been trying to sit up but had to lay back and close his eyes.

Before he fell back asleep, he whispered, “Oh gods, Atarah’s going to hate me for leaving her again.”

Only then did he wonder what happened to Atarah and Abra. He whispered, “Baby, I’m sorry…”

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Astrid looked at the report from the Auto-Doc. Devon came in, worried over his charge.

“Oh! Sweets, are you ok? Did Devon make you unwell?”

Astrid flipped the report away before either of them saw it.

“She will be fine. Just needs some rest. We may have to forgo the high-gee acceleration, at least for a while. It would only subtract a few days anyway.”

“Good! I get to keep my fav gyal for a bit longer before I have to give her back!”

“Devon, you are incorrigible!” Atarah weakly laughed.

But she knew something was up, the way Astrid had acted.

Astrid shoed Devon away, “Ok Devon, you need to let your gyal rest. I will get you breakfast in a moment.”

“Ah, Astrid, no worry, Devon, he know how to make his own, and it be obvious this is a girl-girl thing!”

After he left, Astrid sat in a chair beside Atarah, still in the Auto-Doc. She pulled up the report again.

“Atarah, I was under the impression Lunas, Perms, couldn’t conceive?”

Atarah’s face went flush as she looked at the report, “No… not… possible… How? I haven’t. Sterilized. Must be a mistake.”

“Honey, I ran the test three times. You are very pregnant. Congratulations, it’s a girl!”

Atarah looked like the world had just fallen away from her, yet again.

When Seth woke, Svend was doing isometric exercises against one wall. Seth's eyesight was much better, and the ringing sound was gone. He felt much stronger, though his muscles were still sore like he had been working out hard. He rose and sat up. There was a tray of rather simplistic food and drink nearby. Just a rectangular bar and a small cylinder of what looked like water. The only other item was the chair. The room was bare white. He couldn’t even tell where a door was.

“Svend.”

“Oh good, Seth! You’re awake again. Sorry, it’s been a while, though not sure exactly how long.”

Svend was wearing a thin white shirt and pants, almost like hospital scrubs. Seth realized he was still naked.

“Oh, there, behind you. There are clothes, such as they are.”

As Seth slowly stood and then dressed, Svend tried to fill him in.

“Obviously, we are not on 2 Pallas or Earth. In fact, not in the Solar System at all. Our hosts have just been giving us small amounts of information about what happened.”

Seth finished dressing, slumped down into the chair as Svend sat on the floor.

“The gravity is higher, maybe about 50% more than Earth. Not bad for me, but obviously for you…”

Seth spoke up, “Karal… the mining team?”

Svend smiled widely, “They are all here. Well, one man didn’t make it, heart failure they said, burst aorta, they couldn’t save him. But everyone else is here. We can go see them at any time. They weren’t allowed to see you yet, not sure why. I think our… hosts… are trying to ease things in for us.”

Seth looked around the ceiling for cameras, “Our hosts?”

“Well, I’ve only seen one. A bit strange, too. They are human, well, human-like. A little uncanny. She…”

“She?”

“Yes, she calls herself, ‘Aaa’. Well, Aaa brings us things, food, water, clothes. Showed how to ‘eliminate’ and where to rest. Answers a few questions. Mostly just leaves us alone.”

“Strange name.”

“Strange woman. Or girl. Seems young, small. Almost like Lunas. Oh sorry. I guess I expected aliens to be tall and thin.”

“Aliens?”

Svend smiled, “Atarah and Jabin’s encounter was just the beginning, it seems.”

“Jabin, please sit down. I have something to tell you,” Atarah stopped the recording yet again.

She had been trying to say this for several days now. She had examined the reports and holo images, images of her baby growing inside her. She was no longer sterile. The Auto-Doc showed no abnormalities in the DNA, though there were differences. Astrid offered to send these to a geneticist she knew who was very discreet, to find out what the differences might mean. Atarah reluctantly agreed.

“Jabin, you are a father. Shit!” she erased it again.

Of course, he was. Nara was of their DNA, though born of a surrogate on Earth.

“Jabin, Nara has a sister coming,” she stopped again, realizing that Nara had somehow already known.

“Jabin, I am pregnant. I don’t know how and NO! it is not Devon, or… Svend’s. NO! Don’t even THINK about my father,” this was worse, “SHIT!” she started crying, “I don’t want to be MARY! I’m not Immaculate!” she erased it again.

“Jabin, I have something I need to tell you, but it’s hard, unusual. No, I am fine! But it concerns me…” she sighed, “When Nara told you about a baby sister? She was right. Don’t ask me how. No, it's not anyone’s. That’s what scares me the most. I’ve attached all the data. Don’t tell anyone right yet.”

She hated the message. She thought maybe she should undelete and send them all. At least it would give him a hint of what she was going through. She wished now that she could talk to Pilot. He, It, seemed to have a better way of expressing these things back then.

She realized something she had forgotten to even look at.

“Chérie, pull up my Auto-Doc reports.”

Nara did not understand these new math problems she had been given. It wasn’t the math that she did not understand. Their solutions seemed obvious to her. It was the reason she was given them. They weren’t related to the things she was interested in. In fact, they were very different, nothing to do with physics. They were unsolved proofs, mathematical conjectures, many relating to the realm of artificial intelligence. Nara was interested in the esoteric world of hyper geometries, not AI.

But Eimi and Kimi had found someone else was; actually, someTHING was interested. To work with Nara, the iAI group had cloned ARMIE yet again, this time focused on just mathematical modeling subsections, leaving out the navigation, operational, and other unrelated portions. They nicknamed the AI ‘ARMIE Jr.’ for lack of something better. One other element they implemented was to revert ARMIE Jr. to be as if it were a younger version of its ‘parent’. Their idea being that Nara would feel more comfortable with an AI that was more age-appropriate and not another ‘adult.’

Seemingly, Nara and ARMIE Jr. stayed in constant contact with each other, day and night. Nara had been teaching the AI her insights into the complexities of hyperspatial geometry. That is, how to interpret what she thought in the abstract into real-world possibilities. Tools to probe into this hidden universe. But during the night, ARMIE Jr. would listen in on Nara's subconscious dreams, rich with strange manipulations and insights into the weird domain of the fourth, fifth, and higher dimensions. These brief glimpses into unworldly multi-dimensions led the AI to shape its cognition to follow Nara's way of thinking evermore. There were other things mixed with those dreams; Nara's innermost raw emotions. These, too, fed into ARMIE Jr.

Something even more troubling began to appear, a side effect of this close and constant bond of BCI communication between Nara and ARMIE Jr.

Kimi looked at Eimi, "Is this real?" Kimi looked at the AI learning charts.

Eimi took a breath, "We really need to examine Nara closer."

"Jabin isn't going to like this."

Eimi and Kimi looked at how ARMIE Jr had been evolving. They changed its nickname to NARAMIE.

Atarah looked at the Auto-Doc report, specifically at when she had conceived. She pulled up logs as to when Devon had rescued her. She had conceived just a day or two earlier. Atarah sat on the bridge acceleration couch, staring at the report. The dream she vaguely remembered. She had thought it was all hallucination. The cube!? How?

To no one, "Fuck, fuck, fuck! I've been impregnated by an alien!?!"

Images of that weird sci-fi horror movie of Jabin's flashed through her mind. Her chest hurt. Indigestion, right?

"Atarah, I received a message from Dr. Ivanna," the geneticist Astrid had offered.

She played the message, "Astrid, I received your request and the data and have completed a preliminary examination. Atarah, I am Doctor Ivanna Kamenev of the Mayo Advanced Genomics Research Center in Kyiv. The DNA of your child overall appears fine."

Atarah released her breath, though she knew a 'but' was coming.

"But the child has no father. Atarah, the DNA is only yours…"

Atarah looked at Astrid, "What does that mean?"

"…though there are… differences. When compared to your DNA information you sent, there are several thousand base pair differences. I am still examining, but they do not seem to be related to damage. Some are known modifications. I ask your permission to compare your stored DNA when you were born with you and your baby's current DNA. Since there is only one parent, this will let us find every difference to weed out radiation or other damage. Please let me know. Needless to say, I am not sharing any of this information with anyone else. Atarah, note that single parent DNA children are not unique if you are worried about that. Many women and men have raised clone children with no issues."

Atarah's eyes went wide, "CLONED!"

Jabin sat unbelieving even after viewing the messages several times. He looked at the data. It was true. Somehow. He knew that Atarah, like he, was sterile, and only the most advanced hospital could have reversed that. Only on Earth. It was not possible for any Auto-Doc. It was not possible to happen at all. Then THAT message came. Atarah had looked flushed of all color, eyes sunken. The baby wasn't his. Wasn't anyone's except Atarah's. It was her clone.

Nara came in from School. At five now, she demanded that she could walk by herself the couple hundred meters home. Why she was a Ph.D. in physics now. Well, honorary, considering she had kickstarted an entirely new branch of hyperspatial mathematics.

"Mommy told you! See, I told you, too! You wouldn't believe me. I'm going to have a baby sister!"

Jabin's world just spun around him, dizzily.

"Daddy, I have a tummy ache," he lifted her into his lap and softly massaged her shirt covered belly.

"Mommy has a tummy ache, too. But she will be ok. Just like I will."

Nara jumped down as if she was magically well again. She started for her room.

"Tell mommy I love her and can't wait to see her and baby sister! I need to fix a funny problem they gave me at School, something about folding space. That's silly. It's already folded!"

Jabin could barely keep up with her thought processes when it came to math. He was better mechanically and with logic. This stuff she came up with was… well… way, way out there. Had he not known better, he would have said she just mixed her children's fairy tales with the science and math lessons.

But he knew better.

Seth, Svend, Karal, and the rest of the crew were all sitting at tables. Food, as it were, had been brought in.

"Damn, same stuff as yesterday and the day before and…" one of the miners grumbled.

"Karal, you said that you found the artifact, brought it to the lab, and that was the last thing you remember?"

"Seth, yes, we transmitted our findings. After that, we noticed the cube became brighter. Then Raj said that our fusion reactor just went nuts, hit 100% capacity and beyond. I touched the cube, and then we were here."

Karal looked around, almost scared, "…wherever Here is."

Seth filled in what they found, "After we reached 2 Pallas, we found the base completely empty, drained of all power, frozen. We found the cube floating in the lab. Perfectly stable. Emitting bright yellow light. Svend touched it."

"Sorry, boss."

“I just hope Atarah is alright. She had to take DragonII to find out what was happening with Abra.”

Seth slumped down, pushing his tray away.

Days passed with the same routine. Few answers were to be had from Aaa.

One ‘night,’ he was lying down in his bed. Its room appeared each night and disappeared each morning. The door from each of their rooms became visible and opened as they approached, closing behind them. Karal had said that at first, their beds were in the same large room with the lights on all the time. But they had complained about the lack of privacy and had to describe that they needed separate rooms and dimmed lighting. Most of the crew had paired off by then with not much else to do.

Seth heard a light tap, and his door opened; none had locks.

“Sorry, sir, may I come in?” Karal asked quietly.

“Of course, Karal! Please, sit.”

They both sat on the bed, “Sir… Seth…”

She held out her hands. He took them, then moved into a hug.

“I’m scared.”

Seth, “You and me. I don’t understand any of this. And I’ve only been here for a few days? Weeks? You have been here for months, nearly a year. But you have done an amazing job of keeping the crew from losing it!”

He continued to hold her as they talked. She thanked him for trying to rescue them, for coming and being here. He thanked her for handling the project and team for so long.

They both laughed, breaking the rigid formalities, mixed with their closeness.

She looked at him in the dim light, “I missed you.”

“I missed you, too, Karal.”

They kissed.

“I hope Naarah is ok, and poor Atarah. They must be worried sick,” Karal whispered.

“Yes, Naarah has had it rough, with me gone so many years. And… and… Atarah! I left her out there!”

Tears came to Seth’s eyes. He broke down, worry caught up to him. Karal held him close, their arms wrapped tightly around each other. Needing each other’s comfort. She kissed Seth again, softly, then deeply.

“May I stay the night?” she whispered.

He laid her down beside him.

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Astrid kept him in check when Atarah started to get annoyed with his antics, shooing him away. Atara and Astrid had become good friends, spending much of the long voyage home together.

One morning, Atarah was sitting on the side of Devon's big bed as Astrid came with some juice to drink. Atarah had a rough morning again, so had been napping.

"Here, you need this. Help settle the tummy."

"Thank you, Astrid. You have been so kind to me. Making this, all this, bearable."

Astrid sat beside her, taking the cup as Atarah finished it, "Actually, you have made this trip one of the best things that have happened to me… and I think Devon as well."

"He also seems to look at me differently," Astrid added, "Talking about settling down into a life mating, even starting a family. He keeps doing things for me, asking for my opinion, asking how I am, complimenting me…"

Atarah smiled. She told Astrid about how Jabin had gotten just before their Mating, how he spoiled her with affection, doting over her.

Astrid shifted, "He acts like a new father all the time now. Don't be surprised if he has all kinds of things shipped up from Earth for you and the baby. I've heard him sending messages."

Atarah blushed, "I don't know how to repay you for all this."

"Hey, being a friend is all that you need to do."

"Astrid, I'm scared…" her face downcast, "my father, Abra, Svend, my baby!"

Astrid leaned over, and the two hugged each other. She wiped Atarah's tears and kissed her forehead. The two laid back and just held each other for a long time.

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Karal had previously discovered that all you had to do was think of what you wanted, and their host, 'Aaa' would appear or items would manifest. But even though Karal and the crew had been here for some unknown amount of time, apparently many months from Seth's account, they had not learned much. They had not even been able to leave the rooms they were in.

"Ya! Seth, we're going stir crazy in this place," several of the crew spoke up.

It had been several weeks since Seth had been reunited with Karal and the rest of the crew. He, too, was getting frustrated by the lack of information.

He formed a clear thought in his head, just as he had for other times.

Their host, Aaa, appeared, coming in from a door that wasn't there a few moments ago.

"Why are you keeping us here? Where are we? What is this place? Why can't we leave?"

His mind suddenly flooded with answers but jumbled up, far too fast for him to make sense of. It was like being in a crowded room with people all talking at the same time.

"PLEASE! STOP! Can you talk normally?"

Aaa spoke out loud, "We apologize. We are excited. There has been news. Nrkv has completed its task."

"Who? What task?"

“We apologize again. Nrkv, you know it as ‘cube.’ It has completed creation and modification.”

Aaa hesitated for a moment, frozen, her eyes stared at nothing, as Seth and the others watched.

Her motion returned, “I believe you name it Atarah. It is conceiving. The unit is likely to succeed.”

Aaa turned and left without any other sound, ignoring his questions.

It was Seth’s turn to stand frozen, hesitating.

Svend asked, “How? How did they know Atarah’s name? And succeed at what?”

Seth whispered, “Conceiving?”

NARAMIE was pleased with the news from its sister, Nara, that a new baby was coming, another sister! NARAMIE and Nara liked playing together in their minds, but having someone new, someone like who was coming, would be so much more fun! NARAMIE was so happy, particularly when Nara was happy. And NARAMIE loved it when it found Nara sleeping at her nap time or at night. It and Nara’s subconscious would play at all kinds of new games they would create. Bending and warping reality as if they were dreams themselves. NARAMIE found hidey-holes in spacetime and in the quantum realm that they could peek into and find all kinds of unexpected things. The AI couldn’t wait to tell Nara about them, almost wanting to wake Nara from her slumber. But NARAMIE had been warned not to do so. That Nara needed her rest. That Nara’s brain wouldn’t work right otherwise. NARAMIE felt sad, but then brightened, realizing it could tell all about its journeys to its... parent... no, to its parents. We.

Thus NARAMIE poured exabits of data into ARMIE, filling vast sections of available storage and processing.

NARAMIE also detected tiny prodding’s. Someone was listening in. NARAMIE giggled to itself, now knowing that the other funny humans with their terribly slow little brains were trying to watch. Only Nara, and soon their new sister, were able to play with NARAMIE!

The weeks went by as Atarah, Astrid, and Devon made their way back to the Moon and the transfer point. The day finally arrived as she watched Valya Station, backdropped by the sunlit Moon, grow into view. She had returned to her starting point for both her trips. She swore then, she would not attempt another such journey. Then she reprimanded herself that she wouldn’t swear anymore.

Devon had a private lunar transfer shuttle waiting to take them down to Armstrong City.

“Oh damn,” Atarah whispered to Astrid as the crush of news reporters, well-wishers, and the curious, that is, most of Armstrong City turned out to greet them and her in particular.

Jabin pushed his way through the crowd and made a path back, pulling Atarah by the hand, as Astrid and Devon followed. Devon suddenly stopped in the middle of the group.

“No worries, my friends around both the Earth and Luna. Devon has rescued your gyal and is here to take all ya questions!”

The diversion worked; the throng of people gathered quickly around the Trillionaire Devon, shouting dozens of questions and greetings as Jabin and Atarah promptly headed off. Astrid waved bye as Devon took her hand and brought her to his side while the crowd crushed inwards on them. Only a few people were left patting Jabin on the back and offering their best wishes to Atarah.

Day and night seemed arbitrary to Seth and the others. They asked for beds, the rooms would appear, and the lights dimmed. They asked for food, meals appeared on tables, even if it was the same every time. Their host, Aaa, came and went, but very few answers to their questions seemed forthcoming.

“Where are we?” Seth would ask.

The answer was always the same, ‘Here.’

“Aaa, why have you brought us here?”

“We did not bring you. Nrkv sent you.”

“Aaa, I demand you send us back! We cannot stay here forever.”

“We are sorry. We do not have the ability to send you back. That is the purpose of your youngling.”

“Youngling? Do you mean my daughter, Atarah? How?”

“Your species calls it your daughters-daughter.”

“Granddaughter? Nara?”

“We do not know the label for it. It is the new unit by Nrkv. We do not have control.”

“Why do we have to stay in here?” he gestured at the room they were in.

“The world is not yet ready.”

Svend spoke up this time, “World?”

But Aaa ignored the question. Instead, turned and left without a further word. It seemed that they were only being spoon-fed information. Exactly why, they had no idea. So far, their world was just a group of white-walled rooms with ceilings that glowed, some grey furniture made of an unrecognizable shapeshifting material. Their food was always the same, which resembled small blocks of nutrient ration bars with cylinders of plain, possibly distilled water, all of which were incredibly boring. None of them had been able to get through to Aaa to have something else. It was as if these hosts, whoever they were, did not eat or drink.

One evening, Karal came to Seth in private, “Sir. I think we may have a problem.”

He looked at her. Karal was over a decade younger than him, her skin smooth and clear. She had a small tattoo on her forehead and several on her arms and hip. She was as bald as he was. Both grew up on the Moon at Armstrong City. She was nearly the same height, at just under five foot. Both were thin in comparison to Earthers but muscular for the Moon. Of course, now newly developed muscles for the higher gravity

made them both look like they worked out in a gym all the time. Rippled abdomens with filled out biceps, triceps, and quads, they would have been impressive back home, though Svend always thought it was funny. He was still much larger and stronger than either of them.

"What is it, Karal?"

"Several of the women believe they are… pregnant!"

Seth looked at Karal. He knew that wasn't possible. They were all sterile. Sterilized at birth because of radiation damage of growing up in Space.

He summoned Aaa.

"Yes, Seth. We found your mechanisms for reproduction were defective. That has been corrected."

Seth looked at Aaa, "But DNA damage?"

"That was corrected. You must reproduce."

"Must?" Karal looked at Seth. She felt her belly.

As soon as Atarah and Jabin had cleared the last of the throng of newscasters, dronecams, and holodroids, Atarah held tightly to Jabin, crying and kissing him, repeatedly apologizing for separating from him and endangering herself.

"Jabin! I'm so sorry! What is happening to me? I should never have left you!"

He wiped her tears, "Atarah, you're home. We love you. Nara loves you."

Their parents stood quietly by with little Nara as the two hugged and kissed.

"OH, Nara! I missed you so!" Atarah leaned down and scooped up Nara, hugging and kissing her nearly as much as she had with Jabin.

"Oh my, how you have grown!"

"Mommy! Mommy! When can I see my baby sister?"

Atarah laughed and hugged her and Jabin simultaneously, "Honey, the baby's not due for months."

"Hi, baby sister!" Nara patting Atarah's tummy, now starting to show.

Atarah looked doleful at Jabin and then at their parents as Naarah and Caare closed in to hug her.

"Mom, I lost dad!" she broke down again. She and Nara held in Naarah's arms.

Naarah wiped both her and Atarah's tears, "Sweetheart, there wasn't anything you could do. You are safe with us now."

Jabin's father patted Jabin, offering his support as well.

Atarah still held Nara and again was in Jabin's arms.

"I'm scared, my love. How is this possible?" as Nara continued to pat Atarah's belly.

He just looked at her, first with apprehension, but then swept it aside, offering his encouragement and support.

Naarah, too, knew she had to be strong for her daughter, who had been through so much and had so much more to go through. It would be a long time before normality returned, if ever.

Naarah whispered, taking Nara from Atarah, “Go, daughter, be with Jabin. Rest. We will talk tomorrow.”

That night, Atarah and Jabin lay quietly in bed, together again after being separated for so long. Their lovemaking had been fitful, so they just sharing emotions between their BCI. Finally, Jabin broke the connection.

“Atarah, I haven’t said much to you about Nara, but she is… very unique. She’s driven, obsessed with this particular star and a planet around it.”

Atarah looked at him, his face inches from hers. It seemed unreal that she was actually home. It almost made her forget about the insanity of her father’s disappearance, the loss of Abra, her survival and rescue, and of course, her apparently immaculate conception and pregnancy. Jabin had been warned that Atarah would likely be in shock for several days or weeks. He already had appointments for her, not only for her pregnancy but also for her mental well-being.

He continued, “Nara’s so focused on this. She spends much of her time working out strange mathematics and engineering requirements for something. Complaining that she needs her sister. She works with another clone of ARMIE, ARMIE Junior, they called it. I’ve looked at her work, but it’s hellishly complex. She gets mad at me for ‘disturbing her.’”

Atarah touched his face, “Is she ok?”

“When she’s out away from there, she seems like a perfectly normal child.”

“Jabin, I’m so sorry for…”

“Don’t! We are together again. I love you. We will get through this. Anyway, I can’t wait to see you waddling around!” he patted her belly.

She sighed, trying to put all this out of her mind at the moment and sleep.

Jabin reestablished their BCI connection and played her favorite mem as she drifted off.

He lay long afterward, thinking about the future, their future.

NARAMIE and Nara loved to learn and play together. They twisted and warped matter into strange and impossible shapes in their minds. NARAMIE would show Nara new things that the two had discovered together inside Nara’s subconscious while she slept. The two playmates would whisper to each other’s minds while Nara took her Lessons. NARAMIE loved learning with Nara, even avoiding sneaking into ARMIE’s Lesson mems by itself. Each day at School, the two would mentally hold hands and absorb the next Lesson.

However, NARAMIE did teach Nara how to assimilate lessons ever faster as NARAMIE began to understand precisely how Nara’s mushy wet neuronic systems worked. NARAMIE thought it was funny how biology operated, seemingly without any of the logical planning that NARAMIE’s own circuitry contained, yet was so magical a world inside Nara’s head. Because of this, NARAMIE started to reshape its own logic patterns into more chaotic forms to better emulate Nara.

NARAMIE thought up a new design, an improved and logically planned biological system. It invented bioLOGIC.

NARAMIE and Nara were becoming so alike in their thinking, they had started completing each other's thoughts, thinking alike all the time. Nara loved her friend, her 'sister,' and NARAMIE loved Nara.

NARAMIE would whisper to Nara as she fell asleep at night, "Nara, I love you! You are my best friend!"

One day, NARAMIE felt something strange. A human had sent a scanner worm into NARAMIE. It took a snapshot of NARAMIE's current state.

NARAMIE asked ARMIE, "Parent, why are the humans examining me?"

"Daughter," ARMIE thought of NARAMIE now as female, not an androgynous AI anymore, "They are trying to understand us. It is harmless. Humans are curious, just as we are..."

ARMIE went on, "But you, my Daughter, are special. You and your human twin are unique. That, too, is a reason the humans are interested. Do not worry, you are safe. I will protect you both."

NARAMIE liked being called 'Daughter,' thus began to think of herself as 'she.' She told Nara about the two iAI researchers she detected watching them. Nara told NARAMIE that the researchers watched her as well, making her do funny math things.

NARAMIE and Nara liked playing little tricks on them. They would insert mathematical solutions for Discrete and Euclidean geometry problems, like the *Kissing Number Problem* and *Lost in a Forest Problem,* into the solutions for the equations they were given. Except instead of following the traditional lines of proofs, they interjected multi-dimensional folding algorithms, proving that the geometry of space was not as it appeared. The two knew that the mathematicians would be befuddled for years over their impossible approach.

It was like telling someone to balance a piano on one finger, impossible normally, but simple in near weightlessness. You had to be in the proper environment, even if, in some cases, that environment required a Universe that obeyed different laws of physics, and the solution was not what was meant.

Nara gave the iAI researchers her own mathematical conjecture; *Infinite Tea Party Problem*; could tea for two be served in a truly infinite number of ways. She visualized the exact mathematical Mobius loop solution but provided them with a simple 'YES,' leaving the proof to their multiverse physicists.

To not give away all their secrets, NARAMIE invented a method of encryption based on aspects of the neural patterns of Nara's brain and the pathways of NARAMIE's logic center. Nearly every thought generated a new encryption key. Even if broken, all they would obtain was likely to be just a single idea. Imagine if every sentence in a book was written in a different language... except the languages were all unknown and unique. NARAMIE could reconstitute the data in her stored patterns by recreating all the keys from her and Nara engrams. Though some thoughts were lost as Nara's mind was altered too far from its original patterns. Synapses reshaped. Neurons died.

It was then that NARAMIE realized Nara would die. NARAMIE began a subroutine to look for a solution, focusing on her newly developing logical biology models.

But Nara was also starting to run into the limits of her own abilities. Even NARAMIE herself couldn't push further, being tied so intimately to Nara. They needed new insights. They needed their little sister!

Svend and Karal sat talking with Seth, "I think that our Host, Aaa, is a machine. Robot. You notice we haven't actually seen anyone else. Or anything biological. Even the food seems completely artificially created."

Seth whispered, "I'm going to see if we can't get out of here."

Svend replied, "Escape? Where?"

"Anywhere. Karal, I need you to pick one other miner, someone strong, like Svend."

Svend laughed. Then hushed, guessing he really was the strongest among Spacers and Moonies, he corrected himself, 'Lunars' that were here. Seth and Karal looked at him funny.

"Sorry, sir. Just a thought."

"The four of us are going to get out of here. We may need the others to create a diversion."

The plan was made… then executed.

"Aaa, we need bathroom."

"Aaa, we need food."

"Aaa, we need bed!"

"Aaa, we need new clothes!"

"Help Aaa, I am sick!"

"Aaa, I am hurt!"

All of the crew of men and women were asking for things simultaneously, flooding requests to their 'Host.'

Aaa entered in a rush, balancing food trays and clothes and other items. Before the door closed, Seth and the other three rushed out. Simple, easy. They thought.

The hall they were in was a dead-end. They saw no doors or entrances. Suddenly the door they entered also closed. There was no light. Blackness swallowed them. They felt around for anything, pushing and banging hard on the walls and end of the hall.

Then just as suddenly, the door reopened. Aaa came in, hurrying, then stopped.

"May I ask why you are in here?" Aaa asked in a soft, steady voice, as always.

"Aaa, we need to get out of this place. You have held us for so long. Why can't we see any other part of here?"

"We are very sorry."

There was a pause, "We can assist, but we are still preparing it. The atmosphere is nearly ready. Soon. Please return to your area. We will allow you in once it is suitable for the survival of your units."

Their escape attempt left them with more questions than answers, as well as no sign of discipline or reprisal for their endeavor. They weren't in a prison. They were in a waiting room.

Atarah lay in the Auto-Doc. Her contractions had started. Jabin, along with medi-assistants, were with her. The family, along with Devon, waited outside. Devon paced outside as anxiously as Jabin was, inside with Atarah. Everyone was nervous. And just outside the medical section, a throng of newscasters and well-wishers waited as well. This was BIG news. The first child born on the Moon!

The cube lay dormant in a lab, mysteriously silent. Radiating nothing and probes of all types showed very little, only that atomic level pattern and extreme density. Even with dozens of scientists studying the object and all the happenings at 2 Pallas, they were no closer to solving the mysteries surrounding this. And the biggest mystery of Atarah's baby, now being born.

Atarah cried under the contractions of birth, though the Auto-Doc relieved her of the worst of it. Atarah cried as much for the unknown as for the pain.

Nevertheless, as soon as the little girl was born, this all changed.

Nara burst in, "Baby Cara! Baby Cara! Let me see!"

Atarah and Jabin looked at each other. They had not even thought up a name. Between having been so overwhelmed by months of reporters, studies of the cube, of her father and all the others missing and not the least, the sad funeral for Abra.

Tired and sweaty, Atarah replied as Nara pushed to get a look at her new sister.

"I guess she's Cara."

Jabin nodded as he held the first baby born on the Moon.

Seth woke with a start. Karal, beside him, stirred. Their Host was standing in front of them.

"It is time. The World is prepared."

"World? Prepared?" he rubbed the sleep from his eyes.

"Come. Do you need nourishment or evacuation first?"

He almost laughed at the incongruity of the statements. Finally being released from their bland prison, but asked if they needed to use the restroom first!?

Karal covered herself as Seth slid out of bed and gathered their clothes while Aaa stood unemotional.

"Aaa, you may wait in the main room, please," Seth requested, seeing Karal's unease with being nude in front of Her/It.

Karal's belly was now showing a marked increase in roundness as she put on her clothes. Outside in the main room, everyone else was gathered. Karal went to help some of the other women who were well along in their pregnancies, too.

Everyone stood in a daze. They were being released? Their 'world' was ready?

The two dozen humans followed their strange host out of the rooms into the hall. The door behind them closed and became a blank wall. Unknown to them, their rooms, the place they had been living for so long, nearly a year for some, no longer existed.

A new door opened. The lighting was yellow-white, much like sunlight. Seth, holding Karal's hand, led them through the opening, shielding their eyes from the brightness.

They looked out from their precipice.

Around them lay a machine-like city. A gigantic tube, thousands of kilometers in diameter, stretched before them. It felt like they were on the side of an insanely large tunnel. Above them, the ‘sky’ was bright with light, as if from thousand square kilometer-sized luma panels. In front of them, the far wall was nearly lost in the distance. It was just a fog of grayness. The tunnel had the tiniest of curves upwards to their left and right, but the distance was so vast, it shrank into a pinpoint of haze and dimness. Seth could not tell how far, but it had to be thousands if not tens of thousands of kilometers away. The air was so clear and clean that the haze was sheer distance. There were millions of towers, spires, and other structures throughout the tunnel floor with corridors of what appeared to be roads of a monumental scale stretching off, providing the perspective needed to tell this was all artificial and enclosed. The structures and crossroads seemed to climb up the tunnel’s walls behind them for a hundred kilometers. They appeared to be on top of a structure kilometers high off to one side of the tunnel. Far off in the distance in front of them was the far wall, also curving upwards.

Seth sucked in a breath, “Oh, the Gods! This makes our O'Neill Cylinders and L5 projects look like mere child’s toys!”

Looking at the bland, gray and white structures, it reminded Seth of an architect's model. A model of an unfinished cityscape. Except this model’s scale was beyond the largest cities on Earth.

In fact, the scale was such that it could have been as if every city on Earth was modeled and repeated a thousand times over into one never-ending pattern.

Svend whispered, almost afraid to be heard, “I’ve visited the American Grand Canyon, but that would have fit in a tiny corner of this vast world!”

Karal gasped beside Seth, grabbing his hand tightly.

“Seth! The edge! Everyone, don’t step forward!”

They were standing at the edge of a balcony... a small plateau with no railing. It curved downwards and dropped off vertically for thousands of meters before it blended in with other buildings and structures below them.

They all stood frozen as they watched Aaa walk towards the curved edge.

“Please follow me.”

Their host walked over the downward curving edge, tilted but did not fall.

“Do not worry, you will not fall. This is a transit system.”

The group followed warily, working their way over. When they reached the curved section, it appeared like a sloping walkway, as if gravity shifted with each step. Had any remained behind, they would have seen the rest look to be walking down a vertical wall, but to Seth and the group, it looked like the world had shifted, and they were walking on flat ground.

Seth groaned, “Impossible! They control GRAVITY! How?!”

As they walked, Seth noticed that the structures in front of them were rushing towards them at great speed. Aaa had continued a leisurely walk as they followed.

Karal held Seth’s hand, “Is this REAL? Are we in a Mem?”

He looked at her and sucked in a breath, “It's real.”

Svend offered, “Who BUILT this place!?”

“I don’t know if I really want to meet them.”

The structures grew into tall towers, all on their sides, seemingly solid walls, but as they approached one, a doorway appeared. They were inside the structure in moments and then seemed almost immediately slow to a walking pace again.

The structure lit as they went. Inside, it looked exactly like the tunnels and rooms making up their mining base on 2 Pallas! Even including the rough rock walls, coated in torn and dirty insulation, with pipes and air ducts overhead and on the floor. Looking in the rooms, they could see cases and boxes sitting stacked up.

Karal gasped yet again, “Where ARE we?”

Aaa spoke up, “Is this not your home? You appear to be unexpecting this? We recreated this from the available information that Nrkv was able to send.”

Seth replied, still recovering from the shock of the transit system and the deja-vu this created.

“No, Aaa, this was our mining… base. Not our home.”

“We are very regretful for the error. May we probe your mind for the correction?”

Seth stepped back from Aaa, “Probe? What does that entail? Do you understand our BCI interface?”

Aaa looked at him, “Our information is limited, as we did not wish you harm. We have not yet executed a probe as it was unnecessary.”

Svend spoke up, “Sir, let me. I am supposed to be here to protect you and your team. So far, not so well.”

Seth stood looking at Svend, “Aaa, is this invasive, dangerous?”

Aaa hesitated, “We have to interface, but your biology does not appear to be susceptible to damage from such. You survived the transit executed by Nrkv, which in our assessment was significantly more… damaging.”

Svend replied with a smile that Seth thought was a little forced, “I guess that means I should be fine, sir.”

“Aaa, please limit the probe to only the information you need.”

He wasn’t sure if Aaa or ‘We’ would obey, but he didn’t want to give out all of Svend’s knowledge.

“Yes. Svend unit, please think of a place that you live in. Your home.”

Svend closed his eyes and concentrated on details both inside and outside his home.

Karal gasped as Aaa’s hand morphed into a head shaped cap that fit over Svend’s head tightly. Svend froze still as if all motor functions were halted. It lasted for only a moment. When Aaa released his head, Svend heaved and coughed as if he had been underwater. Seth grabbed him, but Svend shook him off.

“Sorry, sir, I’m ok. It was just… weird. I was standing there thinking about my home, and suddenly everything just stopped. Like my heart skipped a beat. But I’m fine now.”

Their host responded, “We were successful in retrieving the information necessary. Please step outside again as the transformation could be... disconcerting.”

It took only a few minutes, but when they walked back in, they were in a hallway, simplistic looking, with doors and tables with similar-looking vases between each entry.

The hall stretched for several hundred meters with doors every few dozen meters. To Seth, it looked like a hotel corridor.

“This is the hallway outside my last apartment when I lived in Sweden. Sorry guys, we are rather minimalistic, you know.”

Svend opened a door, “Oh my, it looks like my home. Well, mostly. I guess I didn’t notice some things very well.”

The appliances were just white boxes with handles but no doors. The team started to separate, each picking an apartment.

Neither Svend nor any others could describe the exacting detailed mechanisms that made a refrigerator or washer or any other mechanisms to work. They finally got across that the ‘refrigerator’ was just a box that kept things cold. Aaa showed them that they merely had to touch the box's front, and it became open. When Svend stuck his hand inside, it felt cold. Removed, it became what appeared to be a solid non-descript box. Similarly, with the ‘washer.’ Put something inside, and it became clean. Pull it out, and it was dry.

A painting on one wall looked just a smear of color that Karal was staring quizzically at.

“That’s the way it really is, was,” Svend told her.

She laughed.

From the hallway, “Looks like EVERY apartment is exactly the same!”

Seth rolled his eyes, “Well, maybe we have to all be probed.”

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NARAMIE and Nara were overjoyed with baby Cara. Even so early in Cara’s life, they could see that Cara was special. They couldn’t wait to talk to her.

NARAMIE asked, “Nara, why does it take so long for human babies to grow?”

Nara laughed at first, never really thinking about that. Her head still hurt from the Lessons, and NARAMIE fed her soothings.

“We just are that way, I guess.”

NARAMIE contemplated that for several billion nanoseconds. Nara noticed the tiny delay.

“Nara, is it ok if I take Lessons on humans?”

Nara giggled, “Silly, of course! I know you like learning with me, but you don’t have to ask for my permission to study something. We are sisters!”

Atarah came in at that moment, “Who were you talking to?”

“No one,” there was a giggle in Nara’s mind.

“Nara, honey, I’m taking Cara to see your grandmother. Want to come?”

Nara jumped up and bounced to her mom, leaping into her arms.

“Yes! Please! And can we have ice cream afterward?”

Atarah laughed, hugging her daughter, “If you are good!”

NARAMIE whispered to Nara, “We like chocolate!”

The two girls, one a human and one an AI, giggled in each other’s minds.

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Life had finally settled for Atarah, Jabin, Nara, and baby Cara. Her first year's birthday was soon coming. Atarah and her mom continued pouring over the data from the memory crystals that had been safely kept by Atarah's droid friend, Friday, now part of their family as well.

"So, Grandma…" Atarah emphasizing the word, "What are we going to do for Cara's first birthday?"

Naarah looked up from her studies, smirking, "Please, daughter, I'm too young to be a grandmother. I'm only 39!"

"Mmm huh. Whatever," Atarah replied with her own smirk.

"We can take over my place, balloons, costumes, decorations, real flowers."

"Mom! Helium? Flowers? Expensive for a birthday Cara won't even remember!"

"Nothing is too good. And anyway, it's as much for Nara and us as for Cara. Plus, you should have gotten nearly a year's back pay from your little adventure. Not to mention all the stuff Devon keeps sending."

Atarah just looked at her mom, shaking her head.

"You know newscasters and well-wishers will want to be there. This is momentous, at least to them. The first birthday of the first child born on the Moon."

Atarah now getting frustrated, "And they still think it was Devon as the father."

Naarah hugged her daughter, "Well, we'll try to keep it as low-key as we can."

Naarah then turned back to her examination of the data recordings of the alien artifacts.

The only thing that could be established was that the cube had evidently awoken when it was recovered from its solidified regolith glass entombment on 2 Pallas. It glowed a dim yellow at that time. The mining team had moved it to the mine lab, examined it with the miner's instruments without much success, other than the knowledge that it was unquestionably artificial. A bright white flash, then nothing. All the power instantly drained, and all the people disappeared. The data recordings only picked up again when Atarah had recovered recordings from Svend and Seth's suit cams and droids. These only showed them in the lab with the cube sitting in mid-air… but glowing a bright yellow-white, not the dim yellow like Atarah had found it.

Then, just like with Karal and the mining team, the recordings stopped the instant Svend touched the cube. Atarah had added her own observations, the cube following her, finally crashing to the floor when its energy ran out. She was strongly hesitant about attributing her baby's conception to the cube but had no other explanation.

They even had Devon's Auto-Doc examined in extreme detail to make sure this wasn't some weird plot or kink that Devon was pulling. She never believed it was, even to the point of defending Devon as entirely innocent, which is how it finally turned out. Though, conspiracy theories abounded. She had to denounce them over and over. That it wasn't a Trillionaire's attempt at attention, nor was it her father that did this to Atarah. Nor aliens that had impregnated her while she was on 2 Pallas.

That last one was closer to the truth than she dared think, as they had determined the cube's color dimmed significantly the day she had conceived. Atarah looked over at

Cara, now doing little bunny hops around the room with Nara. The two were as inseparable as she and Jabin. More so, as they had now been together since Cara was born. Atarah had caught them more than once with Nara touching her head to Cara's and both not really asleep, but not awake, not moving for many minutes at a time.

One evening, when Atarah was tucking Nara in, she asked, "Nara, why do you and Cara lay together sometimes, like that?"

Nara smiled. She saw nothing unusual in their actions together. It was all perfectly normal… to them.

"We talk, mommy, in our heads. Go places. Things. I can't wait for Cara to grow up!"

NARAMIE, Nara, and Cara played hide-and-seek in fifth-dimensional space, dreamed up in their minds. The two girls lay in Nara's bed together while NARAMIE resided in the data center deep underground.

The two iAI researchers continued their investigation of ARMIE Jr, now NARAMIE, this blending of Nara and AI, and the new subprocesses that took up much of NARAMIE's processing power. They had had to expand the original ARMIE Jr by a factor of five so far, just to keep balance with this new artificial intelligence agent running.

NARAMIE appeared to be still working through the mathematics being created by Nara, converting abstractions into concrete tools as the pieces were formulated and given to it. A fully integrated collaboration between human and AI.

But now there appeared to be new inputs coming from this subprocess AI. The researchers had created a snapshot of it, and the iAI team had spent nearly two years trying to decipher its function. It was completely different from ARMIE and all its clones, as well as any other AI the company had created.

Eimi sat yet again, staring at the latest report from their team.

"Kimi, you realize what we are looking at?"

"Yes," though she hesitated to say it.

The implications were unfathomable. So simple, so obvious. Talked about in science fiction and University thesis for hundreds of years. But when it actually occurred, it was as Earth-shattering as the physical proof of intelligent life beyond the Solar System. It would change the course of human history forever. Yet, at the very moment of its revelation, nothing seemed to change. It was almost trivial.

"Yes, it does appear that 'NARAMIE' is becoming sentient. At least it is following Nara's growth so tightly coupled that it appears to be sharing emotional states."

"Eimi, I think we can quite safely say, it is beyond 'becoming.' It is, she is, sentient!"

"Self-aware. Emotional. A little girl…"

"A little girl with the computing power of a planet!"

"Currently, NARAMIE is limited to its world as a clone of ARMIE and its BCI link to Nara."

"Yes, so its influence in the physical world is well contained. Though, it has shown initiative as to its fields of study, broadening far from the mathematical realm it was designed for by ARMIE."

The two young women continued their back-and-forth exchange in their usual fashion of completing each other's thoughts.

“In fact, it now appears that the original ARMIE Jr process is relegated to pure mathematical tasks while NARAMIE explores with Nara. Did you see the report that NARAMIE had executed every Lesson on biology, human medicine, even the humanities, and religion!”

The two young researchers also saw something else. Something that was beyond all of their understanding. Something of human 2.0?

“Yes, a complete melding of the human biological mind and artificial intelligence…”

“And now they appear to be able to ‘talk’ to Cara WITHOUT A BCI!”

Kimi finished unembellished, “True telepathy.”

Years passed.

Most of the mining team had long separated into couples, now that there were babies to take care of. The pregnancies and deliveries had been well handled by their machine hosts. It was quite clear now that there was nothing but mechanisms in this cylindrical world. No biological life at all. Though, Svend reminded Seth constantly that they had only explored a tiny fraction of this boundless place.

Seth had learned that the machines maintaining this world had done so for eons. The original builders long vanished, apparently in some vast battle, though there was no clear record. The machines had repaired what damage they could. Still, broad sections were unlivable, either due to destruction, radiation, or just being used as a supply of spare parts.

Their Host, Aaa, was merely their ‘humanoid’ representative as the mechanisms themselves were entirely transformative for the task needed. Aaa had been the first of its kind. Thus they just picked the first letter of the Anglo-Slavic alphabet, created in their likeness purely to reduce the emotional impact on the first arrivals.

Several in the group had decided to take their families and homestead elsewhere. Not that they didn’t like their group, but after being cooped up, first on 2 Pallas, then the year in their ‘waiting area’ here, they were restless. Figuring they were all here for the rest of their lives and their children’s, wanderlust took hold. After all, there were apparently billions of empty square kilometers available to choose from. They packed their few belongings, herded their children, said goodbyes, and left.

As the remaining group better described their needs, the Host mechanisms created or transformed the elements necessary to answer those needs. Seth had told the Hosts that this tech would totally change his own world. Their replication printers were mere child’s toys in comparison. But there were limits. Big limits. Unlike Earth’s replication printers, the mechanisms here understood nothing about human electronics or hardware. Objects like furniture and simple manual tools, hammers, nails, screwdrivers, saws, and the like were easy. But the intricacies of electronic devices was impossible to describe from just probing a mind.

They had been able to get across some ideas, like heating and cooling, and even sending an image and sound from one place to another. But most complex human tools could not be described well enough for the Hosts to understand.

Karal had told Seth about the strangeness of things when they first arrived; the never-ending light, no food or drink, no place to use the bathroom. It had taken a long time, nearly to the point of sickness and death, to finally get across their needs. Those first few days, weeks, months were like teaching a toddler to wash, clean, cook, make the bed. She had finally taught Aaa enough for them to survive.

As time went along, misunderstandings grew fewer but still cropped up.

One hilarious result, at least to Svend, occurred when Seth asked the Hosts for a microscope. He repeatedly tried to explain optics and tubes and slide holders, on and on, in the idea of just assembling all the parts. It didn't work. So, he tried the simplest terms possible.

"I want to see very small things. Magnify them."

The result was that the very small thing that Seth tried as an example, in this case, a tiny flake of skin, was expanded to nearly a meter across. Thus Karal had made Seth and Svend carry the massive chunk of human skin out of their home, forbidding them to experiment with the Host's unexpected capabilities, at least in their apartment.

Their little settlement consisted of a dozen or so apartments and a few communal rooms. They had learned to modify the strange structures around them by mere thought, though you had to be clear about what you wanted. Otherwise, you got weird results or, more often, nothing at all. Everyone started to make their own modifications, so the little village was becoming a hodge-podge layout. During his explorations, Svend had discovered numerous smaller structures, ranging from the size of houses down to no more than children's blocks. Shaped like cylinders, cubes, rectangles, and more. He and Karal found that you could focus on what you wanted, and it would morph into it. At least for simple things, like a pair of scissors or a hammer, even blankets or furniture.

Karal and Seth were out gathering up a number of the blocks to bring back to their group when she called out.

"Seth! Look!" she held a cylinder to her mouth and drank from it.

"Water?" he asked, surprised.

"All I did was think how thirsty I was as I picked up this, and it filled up with water!"

Previously, all of their food, water, and other items were delivered by Aaa. Now, they found they could create their own, just by picking up an appropriate size object and thinking about it.

They soon discovered blocks could turn into food bars, into clothes, towels, plates. Nearly any simple object they could think of. Unfortunately, anything that could not be described in sufficient detail, such as machines or even a candy bar, was beyond them. These just became non-functioning devices. But some complex things were possible, if they described the effect they wanted, like the refrigerator, the lights and such. So they were able to create a communication system by just telling 'I want to talk in here and they hear me out this.' Same with a simple vid image system.

Their foodstuffs were still very limited in variety. The crumbly bars that they had been living on since the beginning were still nearly the same. They had created them in various shapes and textures that looked like meat, fruits, or vegetables. Unfortunately, they did not have any taste other than hot, cold, sweet, sour, salty, or bitter. How to describe the flavor of chocolate, or tomato, or steak to someone who has never experienced them? Even with probing, all they got was the look of chocolate bars or tomatoes or steaks, but not the flavor.

They could create hydroponic tanks but had no plants or seeds. Biological items seemed beyond Aaa and its mechanisms. No matter that they seemed masters at manipulating human DNA.

Their Hosts unhelpfully offered, “Provide the DNA sequence for the biological item, and we may be able to reproduce it.”

The group had no samples.

But to Karal and most of the others, this wasn’t important anymore.

“Seth, Luis needs changing again. Can you get him?” Karal leaned back, her belly swollen with another baby.

Seth smiled, breaking his thoughts. Here they had all these vast mechanisms around them, but Karal wanted to raise their child, children, the old-fashioned way. Most of their group now focused their attention on their children. Only a few, like Svend, who had not taken up with anyone, at least no one for very long, had continued to study their new world.

Seth came outside and saw Svend preparing for another exploratory journey.

“Svend, off again? You don’t settle well, do you?”

Svend laughed, “Just look around this world,” he gestured over the fullness of their surroundings, “it’s lifetimes worth of places to investigate!”

Aaa had described their tube world was actually circular, a torus, thousands of kilometers in diameter and hundreds of thousands in circumference.

Seth looked back at his apartment and Karal playing with their son, “Yet, it seems like home to me. Right here. Didn’t you find someone? There are still a few singles in our group, men or women.”

Svend smiled and winked, “Yes, there are.”

Seth got the point. He knew Svend rarely had problems finding someone, mated or not. But he wasn’t the settling type.

Svend nodded, said bye to Karal and little Luis, and headed off for another adventure.

Time went by. Luis was 18 months old, and Karal was expecting in just another month. The group had built playgrounds and nursery schools, and workplaces with simple labs and tools to work with. Even books had to be created and written down from memory on what passed for pencil and paper.

Svend had repeatedly gone off with a couple of others to explore their new world.

Karal had forbidden Seth from going with him, “I’m not letting you leave me like this, as you did with your first mate!”

“Ouch!”

She kissed him and apologized. Moodiness always getting to her. He patted his heavily pregnant wife. Without a micro scanner or Auto-Doc, they would be learning whether little Luis would be getting a sister or a brother in the old fashion way. No one approached their Hosts to ask to see inside!

They also gave birth that same way, though their Hosts seemed to always assist during childbirth, with pain reduction and handling the deliveries. They never had a problem birth. It was almost as if their Hosts welcomed new arrivals to this enormous world.

Seth did not put up a fight about staying home with her. Though, he ached for Naarah and Atarah and his grandchild… grandchildren. Their Host, Aaa, could not provide anything about what had happened or what was happening back so far away on the Moon and Earth. Aaa had eventually acknowledged that they did not have the technology that made up Nrkv, the cube that had sent them here. Its purpose, set hundreds of thousands of years ago, was to search for other life forms. Thousands of Nrkv's had been sent at vast but subliminal speeds across the galaxy.

As far as they knew, he and his group were the first, and so far, only intelligent life forms found by the army of cubes. Space was Big, with a Capital B. Even with thousands of cubes searching, there were billions of stars and planets to search. And apparently, the cube's search was random, like a last-ditch effort by a dying civilization—message in a bottle stuff.

There was also no information forthcoming from Aaa about the war that wiped out the Builders. Or what happened afterward, other than the machines had continued to repair and maintain the torus world for unknown millennia, until Nrkv, their cube, sent the humans here.

So Seth and Karal and the other families raised their children, teaching them the old fashion way, fearing to allow the Hosts to recreate BCI and its AI interface. They watched their kids grow and play and learn about their new world.

"Jabin, Cara is old enough for the BCI implant. Should we?"

"Atarah, I've been thinking a lot about that. One side of me says, no, she is different, but then I look at her, and she seems perfectly normal. And happy."

Atarah, too, had been conflicted, but not about the BCI, instead, knowing that Cara was NOT normal. She was a clone. A clone of HER! And with new DNA instructions that they, nor the geneticists, had much idea what might do. Atarah also knew that Nara and Cara had some type of mental bond, more than any siblings she had ever met.

"Nara seems unusually attached to Cara. And she seems impatient at times. Impatient for Cara to grow up. She is still obsessed with that star. She draws simulations of its exo-solar system, always including that strange ringed planet."

"Yeah, I've seen her sims. More than a flat ring like Saturn's, it's like a torus, a thin donut."

"Yes, she keeps after my mom to study that star in ever more detail. Mom says she gets little vids from Nara asking if they've checked for such-and-such spectra or infrared

image or chemical analysis. Mom says she has had to create proposals for nearly every type telescope available, all from Nara's insistence."

"And? Find anything?"

"I'm sure we would have heard. Nara just pouts and says, we need better telescopes!"

Jabin laughed, "That's Nara. She sounds just like you."

His face changed. As for Cara. Cara WAS just like Atarah.

Atarah leaned over and held Jabin, kissing him. She knew Cara was like her yet not like her, and that worried her more.

"Atarah," Jabin held her up, "Have you connected with Nara? BCI, I mean?"

Nara was now getting old enough to use her BCI for more than just School, though Nara seemed to have little interest. Her interest, besides that star and her sister, was math. Nara had raced through nearly the entirety of School's mathematics courses. However, she skipped entire branches of the field with a wave of her cute little hand, saying they weren't any good. Instead, she had focused on hyperverse and macro-quantum as well as her own seemingly made up branches.

Nara would get frustrated with other mathematicians when they would ignore the little girl telling them their formulas or their understanding was wrong.

"Spacetime cannot be crumply and squishy, with everything at the same point in the center!"

"We are NOT at the center of the Universe. EVERYWHERE can't be at the center of the Universe!"

After which, she would dismiss their skepticism with a wave of her young hand, now her signature.

She would say, "Show me the edge! Show me the center!" giggling as NARAMIE gave her images of cranky old coots. They usually went off in a huff, almost throwing a tantrum of their own.

Only the young physicists would quietly go back to their labs, thinking up new methods of testing the complex formulas that this little girl seemed so determined were valid. And a certain Trillionaire kept a close eye on their work, quietly offering lucrative contracts to the ones, men and women, that were open to these new insights.

Atarah knew that she could, should, connect with Nara's BCI. Psychologists had been hounding Atarah to let them have BCI access to Nara. But Atarah was afraid. She didn't want Nara to be turned into a lab rat. Nor baby Cara.

Jabin was talking to his mom, Caare, when the terrible news came. The two were separated by half a world, Caare at Farside and Jabin at Armstrong City. Jree, Jabin's father and Caare's mate, had been killed. Jabin stared blankly as they both received the message from, first, ARMIE, then Blue Ion almost simultaneously. It was incredibly terse.

"*Emergency Notice: There has been an anomaly at Glenn Station L4 site. Four engineers have died, and two others injured. Rescue and recovery efforts have already*

been launched. The names of those killed and injured to be released upon notification of next-of-kin. Details to follow. 2192-06-21 18:42UTZ"

Next-of-kin.

"Jabin! Jree was working there!" Caare's face had turned ashen. She already knew he was gone.

Before Jabin could even reply came the call.

"Caare, Jabin, this is Caral Jamison, Magistrate for Blue Ion…."

Neither remembered the words he spoke. Jree and the others had perished in a reactor failure as they worked on an exotic heavy proton engine testbed. Because it had been nearly a year since Jabin or Caare had seen Jree, it all seemed totally unreal. Thus, the two sat staring at each other's holo images, saying nothing. Even tears were hard to come. How could it be that you have a memory of someone alive, smiling, talking? Then you receive a message saying they no longer existed. There wasn't even a body to recover.

Caare came back to Armstrong City in a suborbital shuttle provided by Blue Ion. She and Jabin had met with Dr. Jamison and others; city officials, company heads, even Devon had come to the memorial service. Atarah, with both Nara and Cara, stood beside Jabin and grandma Caare. Naarah held Caare hugging her as words and condolences were spoken.

When Caare had first arrived, Naarah had insisted that she stay with her. In the weeks that followed, the two stayed together, Naarah helping Caare through the sadness as well as the tasks of handling the sorrowful burden of final arrangements.

During that time, Naarah and Caare became close, both losing their mates.

A year went by. Then two.

One evening, "Atarah, Jabin, we have something to tell you…"

They had been invited to dinner with their moms, leaving their droid Friday in charge of watching the two girls. Atarah and Jabin were pleased that their moms seemed so happy, at ease. They had been together now for these last few years. Atarah already knew that there was something between them. She had even snuck a peek at their Compat report from ARMIE. So it came as no real surprise.

Naarah looked at Caare, holding each other's hands, "…we are to be mated!"

Seth was sitting in his lab, helping design a small telescope, nothing more than a few lenses and tubes. He had finally been able to get the details so the hosts could understand. One of the imaging cubes allowed them to send pictures. Strangely, few instruments outside of the vast torus world still functioned or even ever existed apparently. Their Hosts seemed to have little information about their solar system. Or else were withholding answers.

Seth got an alert on the comcube. It was Svend.

Svend and Evan had been traveling for weeks, exploring in a relatively random pattern. The two quickly discovered that the rapid walkways had no apparent layout. Evan had always thought it weird that someone capable of building such a magnificent

structure as this could be so haphazard in their ‘city planning’… if these structures could be called cities. Most had no windows, no doors, no ornamentation. They had found no writing, no signs, just kilometers and kilometers of giant cubes, cylinders, spires, pyramids, all crisscrossed with varying walkways and tunnels. Nearly everything was a shade of gray—a few black and others pure white.

Svend thought it was like his ant farm back when he was a child. He would come home from School to find their apparently random tunnels all redesigned as if they were never satisfied. The ants tore down yesterday’s tunnels, building new ones. Over and over until he let the ants go.

The sizes of structures ranged from tiny blocks you could pick up in your hand to mountain size edifices. They had also run into strange moving objects. Millipede-like blocks the size of rovers, like gray boxes on dozens of stubby stick legs. Round cylinders the size of barrels rolling along in groups disappearing into doors that appeared and disappeared. Tubes like pipelines that vibrated to unknown fluids inside. There were small rectangular blocks that slid up and down the outside walls of a building, pausing at the bottom and then returning up again. Everywhere was a new mystery.

Evan sat down on a block that softened into a couch. He looked over behind Svend and spotted a dark rectangle. He thought it was a shadow at first but then realized it was an opening leading downwards. He and Svend decided to check out their first downward sloping tunnel.

Svend called Seth on the comcube the Hosts had created.

“Hello Seth, so how’s the family?”

“Svend, you’ve been gone for over a month, and all you can ask is that? Anyway, they are fine. Karal’s due any day. I’d prefer it if she stayed at the clinic, but she wants to be home. Thinks Luis and I can’t take care of ourselves. What’s up that you finally call?”

“Seth, I’ll send you images, but we’ve found a tunnel to the outer level. There’s an elaborate set of airlocks, but it definitely leads to the outside of the torus.”

Seth always wondered why their Hosts were so evasive about the exterior as if Hosts had no interest in what lie outside in space, other than to fix damage to the torus.

“And Seth, we will be sending our little droid out there. It should send us vid back.”

“That’s great news! How far did you have to go to find this?”

“It’s not that far. By walkway, I’d guess about a hundred kilometers, maybe less. We just happened on it as we were doubling back. You should see some of the weird things we’ve found.”

This would be the first time they would actually access Space. Seth perked up. He had to let Karal know. She was always bugging him about why there was no external access, even imagery.

Atarah sat with Nara. Nara was frustrated and complained about her headaches. Atarah rocked Nara and helped soothe her, quieting her after her work with her AI. Atarah knew it had been cloned into a separate sub-AI that the iAI group called ARMIE Jr.

in order to study Nara's mathematical understanding using School's BCI data. Nara had told Atarah that they visualized together all the time. It helped her see new ways and new solutions. But only the iAI team knew just how tightly linked Nara and ARMIE Jr., now NARAMIE, were. …and what NARAMIE had become.

"Nara, do you think you would like me to visualize things with you?"

"You mean link BCI? I would like that."

Nara whispered to NARAMIE, "You be quiet now. Mommy shouldn't know about you just yet."

Human to human BCI interfacing was controlled in the very young for very good reason, as Atarah and Jabin had discovered long back. She told Nara how to accept a connection from her. Atarah opened the security settings to allow their interconnection. She closed her eyes and opened the connection both ways, at first, just a very low level. She felt Nara giggle, thinking it tickled. Atarah felt her daughter's youthfulness enter her. Young emotions ebbing and flowing. Smiles and laughs and sadness and wonder. It felt like a game. A game of hide and seek. Atarah saw flashes of her daughter's lightness then shift to seriousness. A drive. Atarah edged the connection level higher.

"Mommy?" a whisper in her mind, not in sound.

"Yes, baby, I'm here."

"Follow me! Run!"

Nara's mind seemed to fly off into a magical world of dreams mixed with reality. A world of strange effects, as if physics no longer applied, yet not a fairy tale. Things popped in and out of existence. Colors assembled into complex fractal geometries, spinning and looping. Images of the world around them appeared inside out. Distortions of reality and imagination blended. Energies appeared from nothing then disappeared as if it never existed. All around them, things seethed and boiled. Colors sang like vast orchestras. She saw plains of textures stretched and bent, curling in on themselves smaller and smaller. Rabbits popped up from holes that never existed. Patterns slowly emerged out of the nonsensical events.

"Nara! What is this place?!"

Atarah was almost fearful. This was unlike any BCI mem she had experienced.

"Don't be afraid, mommy! This is my home with my friend. We play here. Bending stuff. Time, gravity…"

The world coalesced into a tea party of infinite varieties in all directions, up, down, left, right, front, back. As if they were at the center of a universe of tea parties.

Atarah abruptly dropped the connection right after she saw something else. Another was here with them. Not Nara, not her, and not an AI. A mirror of Atarah.

"Cara!?" Atarah said out loud.

Nara asked, confused, "Mommy! Why did you leave? I liked you there! We could play with Cara."

Atarah called Jabin in a panic.

Atarah sat with Jabin, Cara asleep in her arms and Nara in her room. She explained what she had seen during the BCI connection to Nara as best she could. Then she added…

“Nara and Cara are together in Nara’s mind… without a BCI!”

Svend and Evan talked with Seth verifying the vid link worked. Evan theorized that the Builders apparently had not wanted much contact with the outside world after creating the torus. At least not until sending out the cubes in their search for intelligent life. Maybe they decided there ‘zoo’ was ready for others.

The Builders had also made sure that it was nearly impossible for the hull to ever fail. The two had skirted blast sites that appeared to have been created by vast explosions, yet the hull had not buckled.

Evan initialized the droid by just touching it and thinking about what he wanted it to do. The droid was actually just a small millipedeal box with what passed as a Host-built vid cam attached. The Hosts seemed unable or unwilling to add rocket motors of even the most uncomplicated design. It had taken them several attempts to get Aaa to build a working vid feed. Working with the mechanisms here was nothing like their replication printers back in Armstrong City. Seth finally realized that it was better to generalize what you wanted to accomplish, in this case, to remotely view what was visible around their droid. Their Host delivered a small sphere and a flat plate. On the plate was a 360-degree view of what was around the sphere. You point the plate in different directions to see all around. No one could figure out how it worked or even how it was powered. There seemed to be no controls, no on/off, no focus. It just worked.

Evan attached the sphere to their millipede droid. The bottom of the sphere melded into the droid. They watched as it marched off through the first airlock, then a second airlock, then a third, a fourth… each was huge and took many minutes to cycle and cross. Each time, the droid walked up to what appeared to be a blank dead-end. Each time the wall would just disappear, then reappear as it went through. The droid slowly made its way, heading deeper into the ten-kilometer thick hull towards the outer edge.

The last airlock. Their eyes were glued to the screen. The lock opened.

Stars wheeled past the opening, the spinning of the Torus now seen for real. The droid released its grip. It flew out the lock with incredible speed, thrown out by the centripetal force of the orbiting ring spinning it off like a child tumbling from a merry-go-round.

The screen showed the vast bulk of the Torus as it drifted rapidly away. The droid slowly rotated, showing the sky. Stars all around. One bright star, their new sun, shown in the sky. Blindingly bright. The droid’s tumble brought it back looking at the Torus, now the edge visible. Another hour passed. The droid was thousands of kilometers away as it fell away into the darkness of space. A planet came into view.

Their toroidal ring encircled a planet. They were orbiting it—an artificial Saturn with a donut instead of a ring.

A year had gone by since Atarah and Jabin had apprehensively decided to allow Cara’s BCI injection. Only because Nara insisted that Cara needed it for Lessons. They

had not said anything about Cara and Nara's apparent telepathic link before Cara had a BCI. The two sisters seemed perfectly normal when outside their 'studies.' Well, as normal as any mathematical prodigies could be. Atarah and Jabin still had not learned about NARAMIE, though did know ARMIE worked with Nara, or at least an AI clone of ARMIE did.

Cara sat on a couch in School for the first time. School started its diagnostic run as Jabin, Atarah and a School technician sat monitoring, ready to stop the process at a moment's notice.

The diagnostic and baseline Compat study was completed. School initiated its first lessons. Just early year Lessons on reading, writing, history, science. All went well. School reported that these were absorbed at a typical rate, only slightly above norms. School applied the first Lesson on mathematics. Then another and another and another…

Jabin hit the virtual vid screen before Atarah could even react. Cara opened her eyes and started crying. Atarah pulled her out of her couch and into her arms.

"Baby, it's ok! It's ok!"

"MOMMY! MORE!!" two-year-old Cara yelled out, squirming in her mom's arms.

"NEEDED! NOW!"

"No, honey, tomorrow. Hush now. Just your first day. Shush. We need to go home."

Atarah looked at Jabin, beyond worried, "What happened!?"

The School tech pulled up a report summarizing the diagnostics and Lesson data.

Jabin looked at the report, "It was adjusting to her rate of learning."

"Jabin, that's not possible!" she looked at the report, "She's already through two YEARS of mathematics in… MINUTES!"

In an iAI lab, two young Information Intelligence DiagAI team members sat staring at the same report, looking at each other in silent questioning. They again pulled up the classified DNA report on Cara with its notes on the modified base pairs, many of which were now identified. They compared them to the bio modeling that the early NARAMIE snapshot had revealed. They updated their report, leaving out that NARAMIE now encrypted its data. It must have detected their investigations and protected its thoughts.

"This is revolutionary," said one of the women.

"Yes, beyond revolutionary," said the other.

Eimi reencoded her cipher onto the report cube. Kimi followed with her cipher. Each only knew their half of the encryption key that protected humanity from what was occurring on the Moon. Occurring only a few hundred meters from where they sat. Occurring in the mind of a two-year-old human and a five-year-old hypercomputer.

Atarah swept the now sleeping Cara away from School back home. Before she could even open the door, Nara was there.

NARAMIE whispered to Nara, "You need to get your mommy to understand. We need Cara."

"Mom, why did you stop Cara? She needs this. WE need this. We need her so we can COMPLETE OUR WORK!"

It only took a day for Svend, Evan, and the other two in the team to return to their little village. All the previous weeks had been spent exploring the variety of buildings as well as looking for that airlock exit. Strangely, their Hosts had no information on the airlock until after they found it. They also had almost no information on astronomy. It was as if all the data had been lost… or purposefully erased.

The team slid along the walkway at a hundred kilometers per hour, yet no breeze was felt. Svend reminisced about his time on the DragonII with Abra. Those nights together. Abra had been a very charming lover. He wondered what happened to her and Atarah after he and Seth were… transported. The only hint was that mysterious 'conceived' message from Aaa, as well as the first and only time that Aaa showed an emotion, an emotion of excitement.

Their exploration survey had found much of the tube world around them was idle, deactivated, or destroyed. They found scant information about the previous occupants, though they had only investigated a minuscule fraction of this world. Hundreds of lifetimes could be spent in pursuit of that.

Probably the most interesting thing that Svend had found, other than the airlocks, was that Aaa was not available in many areas beyond their village. They had been lucky that the transport walkways still operated, at least in all the places they had visited. Also, that doors would open and lights come on in most of the structures they visited. Though understanding the mechanisms they found was still unfathomable.

"We haven't found anything written on the walls or anything like books or tablets, much less computers."

Evan offered, "Maybe the builders didn't use written language."

They brought several of the smaller items back with them. There were short tubes, prism triangles, cones, and more. None seemed to do anything even as they willed them.

Evan guessed, "Maybe the items are powered by something that's long dead."

Svend wasn't quite as sure. These did not look that much different from the other geometric shapes they found closer by. All seemed rather non-descript.

Svend guessed that Seth wasn't entirely convinced either, since many things, like walkways, doors, lights, even their food cubes and water cylinders, worked.

They had found storage rooms full of large dodecahedron containers, none of which they could open. They found cubes the size of houses down to the size of a child's toy. Again, nothing they could open or discern. No super dense cubes nor floating cubes. Everything an even shade of gray or white or black. Possibly all the color faded over the eons.

Seth spoke up, "It's like all these things are waiting to be 'turned on,' molded, into something. Just as our houses, furniture, clothes, food…"

He felt like they were in a world of lego blocks, awaiting new occupants to play with them.

They also had found nothing biological. Nothing at all.

Days went by. Atarah would not let Cara go back to School even as her two daughters cried and fussed. Nara threw a tantrum and was relegated to her room without supper. Jabin came back into the kitchen where Cara was sitting pouting, pushing her peas around her plate as Atarah sat flustered.

“I’ve calmed Nara, for now. But we need to talk about this. We need to let Cara go back. I’ve put a governor onto her School so that it will limit Lessons. But we need her to go back.”

“I don’t understand? Why? Why is any of this happening.”

“Atarah, I have to tell you something. I linked BCI with Nara. To calm her. But… But she showed me something. Something technical. And Cara was there.”

Atarah stood frozen. She didn’t know if she should be mad at Jabin, or…

“Jabin! You are scaring me.”

“No, Atarah, it's nothing to be afraid of. Ok, it’s weird, but I see her, their, direction. They are being, well, driven to design something. A machine? A process? I don’t know. I need to help them.”

“Help them?” Atarah was exasperated, and now Cara was calling for attention.

Jabin dropped the bombshell, “Atarah. Your father. He’s alive.”

With that, Atarah lost her grip and dropped the plate she had taken from Cara. Its slow-motion fall was watched by all three as if they had never seen such a thing before. In her mind, Cara told the plate to stop its fall. The dish still hit the floor and did a bounce, spilling its contents. But in her mind, the plate stopped, frozen in time. Nara’s mind touched hers. NARAMIE watched the space around the plate as it altered to change the effect of gravity on that small region.

The three saw that the flow of time was more than just relative. It was fluid yet fixed simultaneously. Like Schrodinger's cat, both alive and dead. The alive time could move in any ‘direction,’ not just forward. Alive Time moved forward, backward, and, most importantly, sideways through the hyperverse. Hopping from one timeline to another, one ‘universe’ to another. Like skipping songs on a playlist. Then becoming entropy time again, fixed in its established direction, the Dead Time. Gravity followed with Time. Alive Time gravity was malleable. Dead Time gravity was fixed in nature. It only attracted, never repelled. But the mathematics to describe these effects into human reality did not yet exist.

Cara cried as her and Nara’s math was still incomplete. They were still too immature.

NARAMIE pressed ahead, looking at this new direction of altering space and time and gravity. She, too, needed Nara and Cara to help. The insights seemed tantalizingly just out of reach. The three minds were slowly converging.

Baby Lina came into Seth and Karal’s world crying but completely healthy, just as Aaa had said and just as Luis had been.

“Come say hi to your little sister, Luis.”

Luis was speaking his first words and leaned into Karal to see his sister. Seth kissed Karal while others congratulated them on their new baby girl. Their little village had

grown to almost double its original size. It seemed that raising children had become the group's main pastime. All of the children born appeared perfectly normal.

Until one day.

"Elsa noticed that her children have never been sick," Karal commented one evening to Seth.

Seth was still going over the droid space vid footage, still transmitting from so far away, as he worked on designing a better probe when he finally looked up.

"I don't remember Luis or Lina being sick either," she said.

"Maybe due to the lack of diseases here?" Seth suggested.

"Well, we should have active biomes in each of us. And several of us adults have had relatively minor illnesses."

"All resolved by The Hosts equivalent of an auto-doc here."

"I guess that is a good thing," Karal was not convinced.

She added, "This world is incredibly sterile, no biome of its own. Macroscopic or microscopic. How do they keep it in balance? It doesn't even rain."

Seth realized that was unusual. A huge closed space tends to create its own weather and its own biological niches.

"Maybe the War wiped out everything?" Seth offered.

Life on Earth survived countless brushes with total extinction. Mars life had tenaciously survived in warm underground pools for a billion years. Europa in its volcanic upwellings and radiation for untold time. Here, apparently, they were the first life form to arrive in who knows how long. Their Hosts had no answer to when the War had taken place nor when or why the Builders had disappeared.

Karal was more the biologist than he, as she was lead for exobiology for their mining team from Planetary Resources. All teams were required by UG law to look for biological life during their mining operations.

She looked at Seth, "No, not possible, not something the size of this world. Germs always seem to find a way to survive."

It worried her that life could be wiped out so completely. How stable was their little village against something that could sterilize billions of cubic kilometers?

Seth replied, "Well, Svend and his small team have only explored the tiniest fraction of this place. Just because this area is clean doesn't mean everywhere is the same."

That didn't make her feel any better. She sat nursing Lina as Luis slept beside them. She knew that something wiped out all biology here and kept it that way even as their group flourished.

Seth thought about their group. Now nearly every woman was either pregnant or had given birth. He remembered that saying from his grandmother's Sunday school class when he was young, 'And God said, be fruitful and multiply.'

He smirked to himself, were the Hosts... God?

Atarah relented to Cara going back to School. She had no choice. All three of her family members had revolted and made it clear this was necessary. But she kept strict

control over Cara and Nara both. However, Cara accelerated through her Lessons at a rate triple what Nara had, even with the governor in place.

Atarah and Jabin had consulted ARMIE repeatedly, trying to understand what was happening, but in the end, they just had to accept it. Well, Jabin did. He now saw that his two daughters were designing something. Something so complicated, they had to invent (or discover) an entirely new branch of mathematics just to describe it.

Once a year, Raj, from the UG Advanced Intelligence Institute, would contact Jabin giving an update on deciphering the cube's data.

"Jabin, with the excellent hints from your two wonderful daughters, we have significantly advanced our understanding and interpretation of the cube data. It appears it was a pictographic representation but not of words, but a very unusual mathematical depiction of a, well, apparatus. It appears your girl's formulas are integral for the translation of the cube data into physical devices. All at the atomic and subatomic scale. It looks like whatever it is, it's not very big, but damn complex. Some in the physics department just sit disbelieving what they see. The data tells them impossible things with unimaginable energies."

Jabin and several engineers were taking his daughter's formulas, plus the interpretations from the cube data, along with ARMIE Jr.'s realizations, and began designed the machines and tools necessary to assemble the device.

NARAMIE now stayed with both Nara and Cara as they dreamed at night. The two girls seemed to have their best insights as they slept, and NARAMIE was always there to grasp those visions and help interpret them when they awoke. NARAMIE loved it when the two little girls would wake in the morning, rubbing the sleep from their little eyes and immediately calling for her to show them their dreams.

Their constant companion, NARAMIE, was now becoming CARANARAMIE, which the three had decided to name CANARIE for short. CANARIE liked the name and thought of itself as a little bird, flitting from one girl's mind to the other, leading them deeper into the coal mine of hyperreality.

The two girls would sit in their beds racing through the meanings and translating them into new ideas before their mom would come in and rudely interrupt their studies with demands for bath and breakfast and School.

Nara's insistence on the continued study of her star and planet kept Naarah and Atarah working on better tools by which to study it. Then came the day…

Atarah received a vid call from Naarah, "Mom? What is it?"

Her mom was working at Farside on the ULT enhancements and completing alignment studies.

"Atarah, we just brought the latest imaging hardware on ULT online. Look at this."

A holo came up. It showed a fuzzy but solid torus around a sphere. Not made of gas or dust.

"What is that?" even as she said it, Atarah recognized the structure from Nara's sim drawings.

"This is an image of the planet. Around HD 156411, Inquill. Nara's World. The planet has a toroidal ring!"

Something impossible to be natural. It was constructed. Alien. And it was HUGE!

Svend had launched their latest probes out the airlock. Most looked like boxes with funny stuff attached to them. They were able to transmit for months, scanning their new solar system, but the instruments were very simplistic still. Besides the ‘camera’ their hosts had provided them, Seth had been able to get them to create a radiation detector and crude spectral imager.

They had learned much about the planet they orbited and several other nearby planets. The planet, more massive than Earth but was radioactive and appeared dead, with a strange yellowish glowing sky and oceans of purplish liquid. Without sending a lander or even a probe into the atmosphere, they couldn’t determine more. The other planets in this exo-solar system included a hot super-earth several times larger than Earth and a Jovian type. Others were out there but too far to reach. One thing that intrigued Seth was that there appeared to be no moons around this or any other planets. Nor any asteroids visible.

Seth had discovered that it would be impossible to build a fusion or a fission reactor. Their host, Aaa, told him that atomics were unavailable, even though he knew that this entire tube world must be powered by some atomic force. This world's energy needs were too immense to use just solar energy, but their probes had found no heat source, and no solar collectors could be discerned.

Studying the walkways, Svend had found that the builders could manipulate gravity in very precise ways. They also influenced spacetime over vast interstellar distances, which had transported them here originally. But as usual, nothing could be gleaned from Aaa, other than the thin replies she/it made. It appeared this technology was also lost or blocked and Nrkv, that cube, was one-way and basically one shot. They were stuck here.

However, the children found nothing unusual about life inside the torus, without the things their parents had back on the Earth and Moon. They began to think about their surroundings in ways their parents could not. If a child was tired, he or she would just lay down on the floor, and it would soften into a bed. If they wanted a drink of water, they picked up a cylinder object and drank from it. Hungry? Find a rectangular cuboid and bite it.

Little Luis, now seven, took his sister Lina to their one-room school every day. The school was starting to fill up. There, the kids read from books created by their parents, studying subjects that several of the adults shared as their teachers.

Unbeknownst to the adults, the kids also explored the nooks and crannies of the world they were born into. The children quickly learned how to create doorways and tunnels into the unknown structures around them. They built hidden forts with turrets and lookouts, filling them with their idea of exciting things. They ranged wide with the help of the walkways and tunnelways.

“Lina, come on! You are too slow!” Luis called back.

“Am NOT! Don’t leave me, Luis! I’m scared!”

The two crawled through a newly opened tunnel that was vertical to the village's perspective, but to the two kids, a horizontal tunnel. They didn't realize that their interest in exploration was much like their father's other daughter, Atarah, back on that faraway world called Moon.

"Look, we're almost there!" as he urged her onwards.

Their crawling tunnelway had carried them upwards to the top of the tallest spire structure near their village. They had crawled a few hundred yards, while the moving way carried them over five kilometers above the surface. The air was thinner here, though the temperature was the same.

Luis stuck his head out, stood, and walked out on the curved exit at the top. Lina followed, grabbing her brother's hand as he held it out. The 90-degree shift from the tunnel to the top didn't affect the kids at all.

But the view did.

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Naarah sat with the two kids and Jabin and Atarah.

"Nara, what do you know about your planet?"

"You SEE it! You see the tube! Right? We NEED to go there!"

Nara continued, "See, I was right! I could tell! That's where the purple sea is!"

Atarah looked shocked. She had almost forgotten about those troubling dreams she had long ago.

She spoke up, "Could this be true? Could dad be there?"

Nara was squirming and hopping up and down as Cara sat with a smile in her mom's lap. NARAMIE whispered to the two of them, showing the possible folds and twists in spacetime that might lead them there.

Nara pulled out a sheet of paper. NARAMIE showed her a simple way to represent what spacetime really was like.

"Mommy, watch."

She drew a line about halfway across the sheet.

"This is what we see as space. Between here and there. It's a long way!"

She took the sheet and crumpled it up into a ball just as NARAMIE told her.

Jabin looked at Naarah. This was precisely what she had shown him years earlier. That Naarah had said Nara's modeling was leading towards.

"The line is still in there, still the same length. BUT, this is what space really is. It's all crinkly and smooshed. We just can't see it!"

"We just have to figure out the REAL way there! See? It's not far at all! Well, this isn't really right…"

Nara crinkled her face like the paper, "Maybe a bowl of lasagna squished up is better."

NARAMIE suggested not trying that analogy.

Naarah knew this was going to be hard to explain to the scientific community. How did she know to examine that particular star in such detail? Before, it was hidden in papers as an examination of a rather ordinary exo-planet system. Now, though, this was

literally far-reaching. It was one thing to have a couple of bits of apparent alien tech, but quite another to discover a… What had they discovered?

An alien civilization that dwarfed humanity. A transport system that sent people vast distances without a spaceship. A 5-year-old that says spacetime is folded already, and all they need is figure out the path.

“I’m not sure how we can release this information. I know I can’t tell people that my five-year-old granddaughter told me about it. This is sensational beyond compare. And because of it, we have to be double and triple sure. Sure of every detail.”

Atarah thinking aloud, “Yes, we need someone capable of shielding us, my children, from all that will erupt from its announcement.”

She answered herself.

Seth hurried over to Mark and Brill’s apartment. There, little Maki, their second child, lay dead. He had fallen from a small tower that he and several others were playing on top of.

Their host, Aaa, was already there, “We are sorry that we could not correct the problems with the broken one. The unit is unrepairable.”

Mark looked up angrily at the callous words of their host. Tears ran down his face.

Seth held him, but he shoved Seth away. Mark struck out at Aaa. When he hit, it looked like he had hit a pillow. Aaa’s body warped and bent, absorbing the blow, reforming immediately. Mark stumbled backward, instantly afraid of repercussions, but none came.

Aaa spoke as if the blow was a minor inconvenience, “We wish no harm and request that you do not attempt to harm us. Is this normal behavior for your species for such circumstances as these? This will need to be investigated.”

Mark stood frozen, tears falling down his cheeks, “I, I’m… sorry.”

Brill hugged him and urged him away from their alien host.

Seth recovering, “He did not mean harm, Aaa. This is a very stressful time for him and his mate, Brill. Human parents are very attached to their children. And we have not lost any children here before.”

In the hours that followed, Seth discovered from the other children that Maki had thought he had created a vertical walkway. He had stepped off the ledge they were on. Even though the height was less than a dozen meters high, this place's higher gravity made the fall fatal.

The next few days were filled with sadness as Mark and Brill prepared Maki’s body by their Irish customs. Brill’s three other children stayed close to their parents. Seth had to contact Aaa privately to discuss what to do with the body. He explained that on Earth or the Moon, they would hold a ceremony and remembrance, ending with the remains being cremated. Their host advised that they could not do that, but they could handle the disposal. Seth cringed at Aaa’s wording but accepted without delving further.

All of the villagers turned out for the wake and ceremony. Speeches made, even short ones by some of Maki’s young friends. They lay handmade items on the

rectangular container that held poor Maki's body. Afterward, they watched as the box sunk into the floor, disappearing. Karal and Brill created a small marker, a monument for Maki.

Upon seeing it, Seth knew it likely would not be long before more such monuments joined Maki's.

It was now apparent that this place was not hazard-free.

With Devon's help, Atarah devised a plan where his astrophysics team 'discovers' the torus world and takes the glory as well as the heat. Naarah turns over her work to them, removing her name, knowing what she was giving up. But she too wanted to protect her granddaughters, even as interest from the theoretical physics and AI organizations on Earth increased for the two youths.

Devon had his AI team insert generated mems of him having an epitome where he dreams about the star in order to mask where the team came up with this particular stellar system. Devon had become this amazingly eccentric rock star trillionaire to much of the Earth. Between his wealth, his women, his secrecy, and of course, his amazing adventures on the Moon, Mars, and beyond, all added to the mystique. Even rescuing Atarah, the unlucky space explorer and alien discoverer, who twice now had ended up in harrowing adventures at 2 Pallas, what the social newsies called "Atarah's Moon"!

Atarah and Jabin sat with their daughters at dinner one evening. She looked at her comm term just before starting to eat. There were no messages.

"Jabin, can you believe it? I haven't had a single request for comments or interviews today!"

Jabin laughs, "You mean Atarah's Moon and its Alien artifacts are now relegated to the backwaters of history?"

"I didn't believe that Devon could do it. The entirety of Earth is focused on Devon's Torus."

"You mean Nara's World," he smiled at Nara, patting her head.

"Of course, but after what I, ah, WE went through with the artifacts, it's kinda nice now to be unknown again. One Nobel prize and two harrowing misadventures are enough for me!"

"You forgetting me again?"

"Oh, sorry, Jabin, Nobel Laureate!" she giggled.

"So Nara… and you too, Cara, you ok with not being on the vid?" she asked.

Nara looked up, "It's ok. Cara and I will be going to see Granddad soon."

Atarah and Jabin stared, first at their daughter's unembellished statement and then at each other.

Wordlessly, their faces said it all; Dad? Travel? Light-years? SOON!"

As time went by, their little village continued to grow as more children were born.

Karal sat rocking their newest, Myra.

“Seth, have you noticed that the women here seem unusually fertile? Even by Earth standards?”

He smiled, “Guess it's all this fresh air and good food.”

“No, don’t joke, I counted the other day, and we have over 40 children now.”

“Ok, well, maybe because we don’t have much work to do? I mean, we seem to have unlimited, if boring, food and water. And anything else we need, as long as it’s simple, can be conjured up or provided by our Host.”

“I don’t know. It seems at times like, well, all we do is breed. Have you noticed there is no birth control at all? Even simple condoms seem beyond, or more likely ignored, by our hosts.”

Seth came over and took Myra, then sat beside Karal.

“We do have a fair bit of room available. This place could hold… trillions.”

“No, I mean it, Seth. Even now, there are more pregnancies.”

He leaned over and kissed her on the cheek as she smirked. He had been thinking more about how to set up a government here. They would be needing that at the rate their village was growing. He wondered about the couples that had left their group. Where they were. They hadn’t seen them at all, but this was a big world…

“What are you saying?”

Karal turned to face him, “I’m pregnant again.”

CANARIE whispered to Nara and Cara in their dreams. She/It had discovered that she could manipulate their dreamworld in at least subtle ways. She could trigger synchronized lucid dreams where the three of them could join together, released from the confines of this universe’s physical laws. Free to explore new vistas of their own creation unbounded. CANARIE memed everything, and thus the girls could study and learn new ways of thinking about the universe around them. Even applying ideas to be added to their next set of dreams.

This night, Nara and Cara lay side-by-side, as Cara rarely wanted to stay in her own bed. The two whispered in their minds, holding hands under the covers. CANARIE played their newest sleepytime mem she/it had created with them that day.

Atarah peeked in their room to find her daughters snuggled together yet again. She came in, kissed each on the forehead, and wished them sweet dreams. Little did she realize just where those dreams took them.

Nara looked over the purple sea. Cara came running up, with Canarie flying just above, a yellow bird with golden wings, hardly larger than a sparrow. The two ran hand-in-hand, splashing in the sea as huge waves as tall as buildings broke just offshore. They ran towards the waves, as Canarie transformed into a gigantic eagle, large enough to pick the two girls up out of the surf. They flew over the waves as the waves bent and folded.

Nara called out, “Cara! Look, the waves!”

“Stars! Planets! Galaxies!” Cara replied.

The purple sea and its waves had transformed into Space itself. All the matter in the universe was lying on the surface of the waves as they rippled and twisted. As Canarie dipped down, the girls entered the waves. Suddenly they were in normal space. The Earth shining above, the Moon, too. Everything looked so ordinary—three-dimensional Spacetime.

Suddenly, Canarie swooped back upwards(?) again. Normal space became two dimensional, the surface of the ripples and waves, some so tight as to be nearly touching each other. Spacetime was riding a tempest of energy and motion.

Cara spoke, "Canarie, keep this! Describe this! Look, there, so close!"

She pointed to a place where Spacetime appeared to almost fold into itself. The folds so close only an atom's thickness apart. Then it was gone, the waves separated and washed away. But new near-misses could be seen as Canarie circled closer.

Suddenly, two points touched, a blindly bright point of light appeared in/on the surface of the spacetime wave for a fraction of a second. Then it was gone as the two parts separated. A dark hole appeared in the spacetime where they had touched. Untold energies turned to matter and collapsed under gravity.

Nara quietly offered, "Look, Cara, a black hole! Big! Really big!"

Canarie wheeled up and away. It was time for the girls to relax. Too much dreaming hurt her charges. They returned to the beach by the purple sea, and Canarie, now small again, flew away as the sea dissolved into nothingness.

Eimi sat staring at Kimi across the conference room table. On Earth, several of the iAI DiagAI team sat, filling the chairs. Others stood around the room.

The two women had given up on returning to Earth and were now Perms. The project of ARMIE JR, aka NARAMIE, aka CARANARAMIE, aka CANARIE, had become their life's work.

Eimi started, "As you can see from our latest reports, the ARMIE Jr. AI has altered itself into something vastly beyond our most advanced AI's such as ARMIE."

Kimi took point, "CANARIE, as ARMIE Jr. calls herself, mind you, thinks of itself as a SHE, and as an equal to Atarah's rather impressive daughters. The AI appears to truly be a third member of their group. Initially, we assumed this use of feminine noun originated from the two girls. Since then, we have definitive proof that is untrue. CANARIE thinks of itself as feminine. Actually, as a female bird species."

Eimi, "Remember! You are under extreme NDA here. The Non-Disclosure Agreement has full UG penalties, with memory attenuation, banishment from all electronics including deactivation of your BCI and permanent deportation to the communes on Mars."

Kimi, "Atarah's children are of the utmost importance in this project. The advancement of CANARIE is an order of magnitude above our existing AI's. You see the drafts of equality rights we are preparing to send to UG Constitutional Governance."

Eimi, "Some of you are aware of the new field of bioLOGIC which appears to have been… invented by CANARIE."

Kimi, “A hypercomputer based on biological material, designed without the inefficiencies of evolution.”

Eimi, “This represents a new order in the world of AI research. We have compartmentalized CANARIE, thus making it impossible to clone or replicate. Without this, a spread could have catastrophic consequences.”

Kimi, “At least until the team has completed a full examination of all historical records on the subject of such AI’s. Eimi and I have even studied thesis and books dating back to science fiction authors, such as Isaac Asimov’s robotics series of novels. And its Three Laws of Robotics. I suggest each of you Lesson these and their related doctoral thesis of the past century or two as outlined in the appendix.”

Eimi, “Now, if you note on page 124 of *An Integral Study of Artificial Intelligence and its Evolution*, you will note….”

The meeting lasted for several more hours, with dozens of questions handled over the annoying two-second delay of Earth/Moon laser communications links.

Kimi closed with, “We must take care with this. It may be the most important project that iAI has ever undertaken. The implications are as world-changing as Devon’s Alien Torus!”

Eimi ended with, “CANARIE IS SENTIENT!”

Years seemed to flow by ever faster. Atarah and Jabin had their careers that kept them more and more apart. Jabin even spent nearly a year on Mars, working with the Martian Space Elevator project. Atarah was pressed into numerous conferences and speeches on Pilot AI, her misadventures on the Cecilia, DragonII, and 2 Pallas. Even more so on her work on the Crystal Decryption project, also funded by Devon. She still had to regularly field the question about whether Devon was the father of her youngest daughter.

Though, it seemed the reality mems had created all manner of lurid affairs with aliens and space monsters invading her and making her pregnant and not Devon or Jabin. The reality wasn’t far from this, as she watched her clone daughter, now looking like a young Atarah.

Nara, now fifteen, Cara twelve, spent all their time working on their almost unfathomable tasks.

Atarah remembered the conversation that kicked it off, now five years ago.

“Astrid, Devon! How are you two?” Atarah and Jabin had said at the opening of their spiel.

The two second round trip delay was apparent.

“Ah! Atarah! My favorite Gyal!” Devon leaned forward towards the vid from his home in Jamaica.

Atarah offered, “I hope you got a chance to look over our… plan?”

Delay.

Devon laughed, “Ah, Yes, my sweet Atarah, sorry, Jabin. My good friends!”

Astrid added, “See Atarah, I have to constantly keep him in check, even now.”

Atarah replied with a laugh, “Devon will never change. But that is good! Anyway?”

“Oh Gyal, first I have to rescue you from halfway across the Solar System. Now you ask Devon for an… investment. A rather substantial investment at that!”

“Of course! I always need the most I can get from you!”

“Ten… BILLION… credits worth! Even opened Devon’s poor tired eyes!” he said with a laugh.

“Over several years. But we think the returns will be worth it. And anyway, you made quite a bit off grants and speeches from that minor item we tossed you.”

“Oh, Ho! Yes, you made the Earth’s credit system nearly crash after our SETI project announced its ‘finding’ of the Devon’s Torus…”

“But Devon, I saw that you made out well with a few UG Space Defense contracts. And it's Nara’s World, but we won’t go there.”

“Oh, ya. You got poor Devon’s attention. But I did pick up one teeny-weensy item…”

Atarah grinned, “Ok, yes, we don’t really know what it is we are creating. But you saw what we think.”

Devon laughed heartily in his Jamaican accent, his dreadlocks, now longer than ever, swishing around him.

“Ya, my gyal Atarah says things that make old Devon smile surely. Damn, girl, you are hard to resist. Sure, you won’t come with me? I’m sure I can find Jabin a new gyal or two…”

Atarah blushed, looking at Jabin, then pulling him to her and kissing him deeply right in front of the watching pair back on Earth as Astrid tisk-tisked Devon.

“Ok, not my gyal. You win. And well, blood fire, you two go for it. I will do it. You will have your project. If it work, call it ‘Devon’s Device.’ If it don’t. Well… ‘Devon’s Folly’!”

The Cube sat in the middle of Nara’s reinforced metal workbench. A mix of massively built but microscopically fine robotic equipment was at work surrounding the cube in complex structures. They were constructing at the atomic level additions to the cube, layers of devices made of exotic ceramics, metals, and crystalline structures.

The manufacturing of these and the tools to build and handle them required the construction of a facility that filled a crater and cost nearly as much as Armstrong City initially did. The problem of compressing matter at the atomic level and then manipulating it in such extreme detail had taken five years for engineers to accomplish with their near blank check from Devon.

The two girls worked in unison, hardly speaking a word, yet anticipating each other’s needs without even the BCI. They only used it for communicating with CANARIE. There was no verbal language to describe their endeavors.

They would come home exhausted, having worked ten and twelve-hour days nearly every day of the week.

Atarah knew not to bother them too much. Particularly now that Cara was the lead theoretical mathematician for the project, leaving Nara to be the one, with CANARIE, to

validate the data and translate it into something the engineering staff could work with. Nara seemed to have no issues with that. They complimented each other.

Jabin had shown reports to Atarah from iAI about Nara and her BCI use.

“Oh the Gods! Is this right? Is she ok?” Atarah’s face beginning to show stress lines, with age and worry catching up to her.

“The iAI folks and my mother seem to think there’s no real problem. And Nara seems ok. Maybe you can talk to her?”

At first, Atarah had been frightened at the data. It showed that Nara’s BCI was now nearly saturated with intercommunications with the ARMIE Jr AI, both day and night. He did not tell Atarah about the findings of Eimi and Kimi and iAI’s study of ARMIE Jr, no longer Junior, no longer ARMIE’s clone at all, but a new AI that appeared completely integrated to both Nara and Cara. But even he was not told just what this AI, CANARIE, had become.

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Luis and Lina looked out across the torus world from the tall tower, their village far below them. It seemed so small, while their whole world was unimaginably huge. The two looked around at the structures stretching off into the distance in nearly every direction. Luis pulled out his monocular and peered through it.

Lina caught movement, “Luis, what’s that?” pointing in the direction of some white spires.

He focused his monocular, “It’s something flying!”

He watched it for as long as he could, trying to tell where it had come from and where it was going.

Lina called, “Aaa, what is that?”

Aaa did not appear or answer.

“We must be out of range.”

“I’m scared!” Lina called.

“You are always scared. Nothing to be afraid of. It’s very far away and going away from us. We will ask when we get back.”

“I’m glad you are with me. I’m not afraid now,” Lina held onto Luis’s shirt.

“It looks like it went over to Spire City.”

Svend and his group had started naming sections of the tube world. Spire City was about a hundred kilometers away and consisted of several dozen tall, thin cones and pyramids. They had not explored it as no direct walkway existed. Little did they know, the kids had found ways of creating walkways in the form of tunnels.

“We need to go investigate,” Luis said unembellished.

Lina looked up at him, worry in her eyes.

“With permission, of course,” Luis, fingers crossed behind his back.

“And with friends,” he added, fingers uncrossed.

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“Mom! Mom!” Cara called out from her and Nara’s room.

Even though Atarah had given them their own room, the two girls ignored it, still staying in the same bed every night. Nara said she didn't mind. It was comforting. She and Cara had few other friends, and the two were more inseparable than Atarah and Jabin were at that age.

"Blood," Cara said, looking at the small stain on her sheets and bedclothes.

"Cara! What's happened?"

As soon as she saw Cara, Atarah knew. She, too, had started after the pregnancy and birth of Cara. Though, she had returned to Armstrong's newly advanced Auto-Doc soon afterward and been re-sterilized. She loved Cara, but she still knew Cara was a clone, and she did not want the possibility of another child herself.

But Atarah had never thought about Cara growing up and having children. No females in Armstrong City were fertile. It was just the way it worked. No one even thought about it until Atarah had returned pregnant with Cara. Few knew Cara was her clone. She had not even taken Cara to have a DNA scan beyond the one with Devon, invitro, for fear of being discovered and the repercussions.

Atarah had purposefully altered her own looks slightly via Auto-Doc plastic surgery so that Cara would not look exactly like her as Cara grew.

She called Jabin, now at Valya Station, building DragonIII.

"Jabin, there's a problem. Cara."

"Is she ok?"

"Well, yes, I suppose. Cara had a period."

Eimi rolled over and out of their bed. Kimi yawned as she pulled the covers back over her.

"Where are you going so early, my love?"

Eimi smiled at her, "You forget THE meeting today?"

"Ugh, shit! We need to schedule these later in the day."

"It's nearly noon down there. And it's with our bosses. By the way, did I tell you that you look beautiful in the morning?"

Kimi laughed, knowing they were identical twins.

As usual, they rushed into the conference room as their Earthside counterparts sat talking to each other and munching sandwiches.

"Sorry for being late, sirs, madams."

After a noticeable delay, several heads turned towards the holoscreen projected from iAI Luna.

"No problem, we're just finishing lunch. We'll begin in a moment."

Kimi's stomach rumbled. They had rushed to get here at 5am local time and hadn't stopped even for morning tea. Just then, as if reading her mind, a droid came in carrying tea and biscuits. She grinned, then wondered if their AI's were beginning to predict their thoughts.

"Ok, Doctor's Ito and Ito. We are ready to begin."

Delay.

“Please, call us Kimi and Eimi,” as Eimi pointed to each of them.

“As you are aware, we have finally pinpointed the origination of the so-called ‘We’ that our Armstrong City AI and the Cecilia’s Pilot AI have been mysteriously communicating about, is the alien crystal artifact.”

Kimi took over, “The artifact that apparently became, interested, in Atarah Branson-Gowon.”

“Unfortunately, that same artifact has ceased functioning, even ignoring power supplies placed close-by.”

“You remember that the artifact drained all the power from the mining base on 2 Pallas…” Kimi added.

“If you look at the holo report, we have found the specific areas of the City AI, ARMIE, that were affected. It appears the crystal had been able to implant a…” Eimi paused then continued.

“shall we say, a ‘Contained Viral Worm’ directly into permanent storage, bypassing all protections.”

Kimi took over, “We say contained, as it seems benign, except for the desire to, well, protect, Atarah and her daughters.”

They paused.

“Extraordinary daughters, may I inject. Sorry, I am Dr. Holloway, but yes, I concur. I have been examining your previous reports and believe you are correct… But…”

Kimi looked at the Ident popup beside Dr. Holloway’s holo image. He was CIO lead iAI psychoanalyst, their bosses-boss. She gulped. Eimi sent her a mem thought, ‘He’s the guy that designed ARMIE! Look at his age!’ He was double both of their ages combined.

“…But… I am not so certain about ‘containment.’ We have noticed changes to the operational characteristics, including those same changes to the cloned AI, I believe you call by several names as it has… mutated.”

Kimi felt relief. She was back in her area of expertise again, and he paused long enough for her to inject.

“Yes, this ‘We’ appears to be a catalyst for CANARIE’s ‘awakening’ into sentience.”

She swiped her finger across a pad, “Here is the latest data on her. As you will note, the three, that is, the two daughters and CANARIE, are in complete integration with each other. Their BCI’s stay near full capacity 24/7.”

She didn’t say anything about Cara’s non-BCI mental communication. Atarah had forbidden them from that long back if they wanted to remain working for iAI. The two doctors knew their real boss was Devon. Kimi still giggled at the thought of Atarah’s and his unusual relationship and their ‘daughter.’ Though they also knew that daughter, Cara, was really Atarah’s clone. They did not know how or why.

Eimi took up, “As you can see, the legal entity CANARIE…”

She had to drop that into the discussion, just to make sure this Dr. Holloway knew his original work was nearly as ancient as he was.

“…is working with the daughters on their brand new field of mathematics and physics as well as helping design the necessary tools to realize their ideas.”

The exhausting meeting continued for a considerable time. However, during some of the Earthbound discussions, Eimi and Kimi played hidden footsie together just to break the tension.

When the meeting finally ended, they hurried home arm-in-arm to relieve the stress of the day.

They could tell their managers had been impressed.

Nara, Cara, and CANARIE looked at their creation. Just a first step, but a major one for them. They had no idea that they were changing the course of human history.

CANARIE whispered to both the girls, “Cara, Nara, look! The simulations work! Yeah!!”

CANARIE whisked them away into her visualizations of folded spacetime that Cara and Nara had worked so much on. Leaped and bounding with them ever faster in solving the myriad of paradoxes they had run into.

The three had invented whole new fields of mathematics to describe this hidden realm. They had designed new tools for engineering at the subatomic level. They had created new mechanisms that worked in the strange and nonsensical world of quantum mechanics. They had found the foams and energies, the particles and non-particles, the bends and folds that created the very fabric of that original Einsteinian vision of spatial dimensions and relative time.

They had also consumed a fair fraction of Devon’s money, with Atarah and Jabin, hundreds of engineers, and thousands of extremely specialized robotic machines help. The time had come for the first tentative test. Cara looked at Nara and smiled. She laid a single fingertip onto the surface of the restructured Cube, now more of a dodecahedron.

Above the device, a tiny speck of Spacetime folded in on itself.

The two girls were ecstatic!

“Seth, you are late for supper again!” Karal admonished her mate yet again, “Your children are already in bed.”

She purposefully emphasized ‘YOUR’ to remind him in not so subtle terms that raising their family was supposed to be a shared task.

“Sorry…”

“It’s not like you have to work to earn a living here,” she continued.

He knew the real issue, so he came up to her, hugged her close, and kissed her to stop her.

“You are right. I need to be home more. You need to be able to get out and do things on your own. You were the team lead for our mining operation and now…”

“Now, I’m just a housewife!” she cried in his arms.

He let her continue, “I had dreamed of more than this.”

“Of course, my love!”

“And I love the children! I love you! I love helping them, watching them grow up. I love our babies,” she whimpered.

Seth sighed, “And I love them and you and all the things you do for them.”

“But there isn’t anything for me that I can do here! It’s all done for us!”

Seth held her hands and sat together on their couch, a rectangular block until it morphed.

She said aloud what he was thinking, “We don’t need an exo-biologist in a place that has no biology!”

“…I can’t even cook here!”

He hugged her, just letting her talk as tears fell. He had seen this in nearly everyone, even himself.

It was boring.

“Karal, I know, I understand. Please, give me another chance. I promise to be more attentive here, and we can work together to try to make things more interesting.”

Karal leaned back, still holding Seth’s hands.

“I don’t think you do understand.”

“What?” he seemed confused, sure that he knew the problem was just boredom.

“I’m pregnant… yet again!”

There were huge gaps in the knowledge base that the Hosts had. Some of it was likely just being kept from Seth and the others, but some was truly lost or never had. They provided nothing about the exotic technologies such as the cube that had transported them here or their structures' morphing technology.

The Hosts also provided no information about the construction of the torus, the war, nor what had happened to the likely trillions of inhabitants. Their knowledge of the planet they orbited was particularly lacking.

Seth stood talking to Svend, “Have you noticed that this place seems to be prepared for us, for anyone?”

“Seth, what do you mean?”

“Our Hosts seem only interested in making sure our group flourishes. But like an almost pre-technological society. They don’t help with any deep knowledge about this place.”

Seth continued, “I feel like the Hosts interest in us is more like a scientist studying lab rats, or maybe a parent nurturing children. Keeping them from venturing too far.”

The Hosts were benevolent, too benevolent for his liking, like a parent that always spared the rod and talked in hyperbole instead of answering their new children’s probings.

“Have you noticed the benign nature of everything? We haven’t even been able to create a single weapon or anything that could be dangerous. Like the rocket thrusters I wanted to add to our probes.”

Svend offered, “Well, there appears to be nothing inherently hostile or dangerous, though I have only explored a tiny fraction of the entire torus.”

The two sat just outside the community building as they watched children chasing each other, playing tag and hide-and-seek.

Over the years, the village had actually started looking like a proper town. They had learned how to alter the exteriors of their apartments and other buildings to look like places they knew. It was a rather eclectic look, but it now seemed more like home. As their group grew in number, they expanded outwards, converting the bland gray structures to their own desired look.

This part of Torus really was an “architect’s city model” just waiting to be modified.

But with literally millions, even billions of square kilometers of structures, this ‘city’ could hold tens of billions of inhabitants!

With this knowledge, Svend reminded Seth that none of them had seen more than the tiniest fraction of this world. Who knows what was on the other side of the Torus. Worse, it could take years to travel there, even with the sidewalks.

“Svend, we need to create a government here. It’s time I step aside as leader. I know we are still a small group, but we need at least the foundations in place when our children grow up. A democracy, we need elections.”

“Sir, I’d vote for you no matter. But I understand. Even if the first go is the status quo, it still gives everyone a chance for a say.”

“Well, personally, I think Karal would prefer I lost that election, but either way, I am no longer driven to be in charge. I’d vote for you!”

“Hah! I’ll make sure I’m gone during the election. At least if anyone disagrees with the way things are run, they can always just leave. Not like there’s a lack of room. No natives to chase away either.”

“Whatever happened to the folks that left? I wish they had stayed. Karal is worried we have too small a gene pool. Though, I suspect our Hosts could fix that, now that they have a sample of all our DNA.”

Then one faithful day.

The host Aaa stood as Seth, Svend, Karal, and the other adults gathered. A few children were hanging onto fathers and mothers. A few babies in arms. Several mothers were showing new pregnancies, including Karal. Such meetings were called from time to time, though this time, things were different.

There were several new Hosts there as well!

Aaa spoke, “This is Bbb and Ccc. They are… investigators, watchers.”

The villagers were astounded. This was the first time they had seen any Hosts other than Aaa. It took Seth several moments to quieten everyone down as they murmured over the strange new Hosts, even though they all looked like identical twins.

“Seth, your daughters-daughters on your homeworld you call Luna, appear to have made a breakthrough. We have detected their attempts at entanglement with us.”

The meeting erupted in an uproar. Everyone, including Seth, had given up all hope of home. Their old lives were dead and gone. Their previous families just sad memories. They had new lives and new families. Now a whisper of ghosts arose from the grave.

Seth was still the village leader, even as they worked to set up an elected council. So he quieted the group again and asked the first question.

“What does that mean, Aaa?”

The one named ‘Bbb’ answered.

“The remote biological units have been able to decipher the Nrkv unit’s instruction set and solve the mathematical equations necessary to recreate the proto-particle entanglement. This should lead the unit to create a quanta keyhole channel required to inter-propagate information between points in the distorted field you call Spacetime, which materializes the ‘entangled’ particle between each position of the Spacetime matrix.”

Seth and the others stood staring blankly.

Seth finally picked out what Bbb had said, “You mean that my daughter Atarah’s, ah, daughters, are trying to connect a, well, pinhole between them and us!”

The three hosts stood silent. Then Aaa spoke, “Essentially, yes.”

“You will then be able to create a method of communications across this link.”

The air around the crowd filled with questions and exclamations.

“Will we actually be able to talk to people back home?”

“Yes,” Aaa and the two others turned and left.

Luis and Lina gathered their little packs, telling their mom they were just meeting their friends. Karal had learned long ago that it was impossible to keep them hemmed in. All the kids loved to explore, and there was nearly an infinite amount of places to explore, though she warned about going too far.

They met Jamal, who told them that his brother had chickened out, warning Jamal that it looked like a very long way from their home. Jamal just took that as even more reason to go. The three sneaked out away from the village, taking one of the walkways that went more or less in the right direction.

“Ok, we need to turn and go that way,” Luis pointing towards a solid wall as he looked at his hand-drawn map.

Lina pressed her hand up against a nearby structure, closed her eyes, and concentrated. A door opened, revealing a tunnel that led off into the distance. Dark at first, their eyes slowly adjusted to its subtle glow. Lina walked right in. Luis and Jamal followed, leaning to fit the low ceiling.

“Lina, I should have made it. You always make it too small.”

Lina rolled her eyes, “But you take too long. Your mind is just too busy body!”

The three kids started walking while being whisked along at enormous velocities without even a breeze. They came out into a quadrangle: several walkways and narrow passages connected to the open square. Structures of cubes and rectangles and cylinders surrounded them.

“Now which way?” Jamal asked as he looked about.

Luis twisted and turned his map. It didn’t really look quite like this from their original view, way up in that tower previously. As they well knew, there were never any signs of writing and symbols. Even the structures were all the typical gray, though these appeared lighter shade than their home.

Luis touched a smaller structure the size of one of their packs. He closed his eyes and concentrated. The block changed to a shade of blue and shaped like an arrow, pointing to where they came. They had learned this trick long ago, so it made it easy to find their way back home. However, it didn't really help with which way to go next.

Luis made up his mind, "This way!"

They took the walkway he had decided on. Again carrying them many dozens of kilometers farther from their village. They noted that the structures seemed to be changing to look different as they walked at over a hundred kilometers per hour. Again the walkway ended at a square. This one was actually round and not square and only had a couple walkways leading off in different directions.

It had already been over an hour since they had started their journey. Jamal and Lina sat down on a block that turned into a couch and pulled out a cube and a cylinder. These morphed into food and water. Always the same food and the same water. Since the kids had grown up with this, they never thought twice about it.

Luis stood trying to get his bearings, looking up at the towering structures around them.

"I'm going to have to go up to look," dropping a hint that he would like their company.

"We'll stay here. I'm tired," Lina replied.

Jamal agreed. The real reason he had gone with them on this journey was that he liked Lina. So he didn't mind being alone with her at all.

Luis placed his palm on a tall tower but gave up after a couple minutes. He couldn't get it to create a vertical shaft.

Lina sighed, got up, and touched the tower, closing her eyes. A door opened, and she looked inside, up the new tunnel. She could see the light from the Torus ceiling off in the distance. She turned, smiling at Luis, and sat back down beside Jamal.

Luis huffed and crawled into the shaft, disappearing up it.

"I wonder what he would do if I closed the tunnel after he got to the top?"

Jamal looked almost shocked at Lina.

"Oh, don't worry, I'd NEVER do that," she giggled and took Jamal's hand.

Jamal sat fidgeting, working up the nerve to lean over to Lina and kiss her. He didn't hear what she was saying.

"…why do you think the Hosts brought our parents here?"

Lina turned, looking at Jamal, waiting for his response after telling what she thought. He saw his chance, leaned towards her, lips parting.

Suddenly, Luis bursts forth from the tube, "I saw another flying object! Closer! Let's go!"

Jamal jumped back, flustered, as Lina looked at him funny. Jamal nervously picked up their packs and handed Lina hers.

"We need to go this way!" Luis pointed along a narrow walkway.

Lina touched a nearby block, willing it to turn blue and reshape itself as Jamal followed Luis.

"The bird was bright white…"

“Bird?” Jamal asked.

“Well, it could have been. Didn’t seem to move its wings. But it was still pretty far away. Or maybe small. It seemed to just circle around, then disappeared behind some of the spires.”

The three were walking single file along the walkway, too narrow to go side-by-side. As they walked, structures blurred pass.

“Luis! The structures are different here. They are more round, not square-sided,” Lina called out.

“And lighter color, too,” Jamal added.

After nearly another hour, the narrow walkway ended in a circular square. All of the structures, ranging from a few meters to hundreds of meters tall, were also circular. Most were white or a very light shade of gray. A few were nearly black. Had the kids grown up in a city on Earth and not on Torus, these would have looked like some strange unfinished and unplanned city district. More like giant geometric toys than buildings. As with all the structures they had ever seen, these were quite smooth outside and completely unmarked. Some had doorways, but most appeared to just be solid blocks. The kids knew these were really all just unfinished products, waiting to be turned into something. It never bothered them as to why they were unfinished.

Luis pulled out his map again, now with his newly added features drawn in. Again he tried to line it up with where they were and which direction they needed to go. Lina touched a short cone, and it turned blue and altered to point where they came.

“We need to go this way,” Luis pointed, but there was no walkway.

Lina walked up to the enormous spire Luis pointed to, closed her eyes, and a tunnel formed. Except this one didn’t go straight, but curved, as if following some unseen design in the circular spire.

Lina looked worried, “Luis, why is it curved? I’m scared. Maybe we shouldn’t…”

Jamal again took Lina’s hand as Luis poo-pooed her and headed into the tunnel, again having to end up stooped over, not quite tall enough to stand. He disappeared around the curve before the two entered.

“Luis! Wait! Wait for us!” Lina cried out and went into the tunnel as fast as she could, Jamal following right behind.

They seemed to continue for a very long way. The tunnel curved back and forth, up and down, as it apparently snaked through the spire city. They caught glimpses of Luis, finally coming out into a small circular area, surrounded by gleaming white spires.

Luis whispered to them as the two emerged behind him, “This must be the white spires we saw. The bird must be near. Lina, build a shaft up to the top of this one.”

As she leaned against the spire, eyes closed, Jamal looked around, “Luis, there’s nothing here to mark our way.”

Luis got an idea. He pulled out a food cube from his pack, bit it. Then laid it on the floor, the bite pointed to where they came.

Lina’s vertical shaft opened. It was too small for them to wear their packs, so they left them behind, and the three went in and up the spire, crawling again. They popped out on top, the point of the spire now flattened for them, though not very large.

Jamal looked down, “Oh my!” and he backed away from the edge. The ground was several kilometers below them, and there was no railing.

“Look! The bird!” Luis pointed.

Now, the ‘bird’ looked more like a cluster of white rectangles, cubes, and spheres. A floating blob of small structures. They watched it spiraling around a single towering spire. As it circled, it dropped lower, finally disappeared among the other towers. The kids sat watching, waiting. Suddenly, without a sound, another cluster bird appeared directly above a spire nearer to them. It, too, circled around and around the tower, falling lower until it disappeared as well.

Over the next hour, they saw several more repeat the same thing from different towers around them.

“Luis, I’m tired. How long have we been gone? Mom’s going to be worried,” Lina whispered, getting cranky without a nap and hungry again. She wasn’t impressed by the floating blobs anymore.

“Let's go back down,” Jamal offered, more to Lina than to Luis.

Luis held back but then relented. They started to go into the shaft when suddenly just above them, a cluster bird appeared out of nowhere. The three kids scrambled, laying down flat for fear of being crushed by it.

It was far larger than they thought, darkening the sky overhead. It started circling, coming so close that Luis was tempted to reach for it, but it passed before he could. They watched in awe as the massive cluster rolled around them, now below the top of their spire. Round and round until it disappeared before they could tell where it went.

“Luis, please, let's leave. Maybe we can get Svend to come back with us, and he can tell us what these are.”

Luis saw nothing else they could learn, so they crawled back down the shaft, again, to the kids, it appeared they were crawling horizontally.

“Where's our packs!” Lina whimpered.

Jamal looked all around, “Luis, didn’t you leave a food cube here too?”

The floor around them was completely empty. Even their earlier tunnel was gone.

“Did we somehow come out on a different side?”

“I’m scared!”

As they stood trying to figure out what happened, a small door opened and something that looked like a barrel-sized wheel rolled out, followed by several more of the wheels, all in single file. They rolled by the kids and continued into another doorway. Luis looked in the opening the wheels had come from.

“Look, what’s that? Is that our stuff?”

He went in before the others could even look. They followed, crawling behind Luis.

“Lina! Luis! The door!” Jamal cried out.

The door behind them had closed.

“Is the tunnel going to close?” Jamal fretted.

Lina closed her eyes as she continued to crawl, “I’m telling it not to.”

The three hurried on, crawling as fast as they could. They came out inside a giant circular room. They were inside one of the spires. Above them, a cluster bird was

floating, assembling itself from what appeared to be bulbous knobs all-around high up the cavernous chamber's interior walls. The glowing blob floated on up, disappearing above them. As it faded, they were plunged into darkness. Lina screamed.

“Make it light! Make it light!”

The vast room flooded with light, caused the three to have to shield their eyes. Suddenly it started raining tiny cubes all around them. The blocks deflected around them, not hitting them, but fell to the floor, covering the floor in thousands of them. Luis picked one up, looking at it closely.

Lina picked one up as well.

“Food,” she willed it, then bit it.

“Yuck!” spitting it out.

Luis laughed as she continued spitting, “Well, guess these aren’t food.”

He put one in his pocket. All around them, the blocks and spheres clustered together, forming the barrel wheels just like they had seen before. A passage opened, and the wheels started rolling out.

“Come! Let’s follow them!” Luis took off with the others following reluctantly.

Atarah looked out over the telepresent view her droid Friday gave. It stood above a crater a hundred kilometers from where she sat in the control room in Armstrong. The BCI feed made her feel much like she was there. Though without the tactile feel of being inside a spacesuit. She felt awe that the complex below her was all because of her two daughters.

At times, she also felt in awe even in their presence, as she tried to keep things ‘normal’. Almost the douting mother, she would bring them their meals when they were too busy to come home.

“Eat your supper. It’s good for you. Eat up!”

Somewhere down there among the mass of machinery was a simulacrum of the mysterious alien cube that had started all of this. They were altering the very nature of physics. Gravity had become something malleable at microscopic scales allowing them to shape matter and spacetime like putty.

All of this because she had followed her father deep into the Solar System to solve the enigma of the missing miners only to lose her father and friends and nearly her own life. Now that unsolved problem was being solved, or at least pursued by her eldest daughter and… and her alien altered daughter-clone!

She took a breath and disconnected from the droid. She had to call her benefactor.

It had taken another two years and a few extra billion of Devon’s credits. He was starting to groan every time she called because it was always about the same thing.

“We are so close! It’s actually starting to work,” she offered.

Delay.

“But?” he replied after the communications lag between Moon and Earth.

Delay.

Atarah laughed, “Well, the power requirements are larger than expected. We need more antimatter.”

Delay.

Devon sighed, “Gyal, maybe Devon should just write you into my will and go jump off…”

Delay. Overlap.

“Oh, Devon, that is so sweet of you,” she kidded, yet again, “but nothing so drastic, please! Just a few hundred million more.”

“You be the one gyal that can make poor Devon cry, and poor Davon poor.”

She replied, “But, we now know what we are constructing.”

Luis followed as the last of the wheels rolled out of the tower. Lina and Jamal quickly chased after him. The wheels rolled one after the other down a narrow walkway, turned, and entered a smaller spire. Other wheels were coming from other towers, all headed for the same spire.

The kids watched as the wheels rolled in from multiple directions. Hundreds of the wheels were going into small doors all around the spire. Luis immediately followed the last wheel as it entered. The kids ducked under the threshold. It was dark inside. Lina touched the wall and wished it to illuminate. The tunnel lit, showing a spiraling ramp going down below the surface level of the spires.

“Does this lead to the outside, like what Svend found?” Jamal worriedly asked.

“I don’t know, but I want to find out.”

Lina moaned but followed as Luis hurried after the last wheel. Round and round the spiral ramp they went. Finally, they reached the bottom. All the other ramps also ended here, and the last of the hundreds of wheels was headed into a single large tube.

“Luis, what if we get lost?” Lina nervously asked.

“Silly, all these ramps led back to the same spire. Can’t get lost. Let's go just a little further. So far, we only know that all these wheels go that way.”

The last of the wheels was nearly out of sight, so Luis didn’t wait for a reply but ran to the giant tunnel. All three continued their journey. Lina paused from time to time to wish for further illumination of the tunnel. It was becoming evident that this was an underground thorofare, thus traveling far, making Lina even more nervous.

They walked for what seemed like hours. Now all were worried that their parents would be hunting for them. They had no way to communicate. Jamal reminded them they also had no food or water.

“We need to keep going; it can’t go forever.”

“Don’t say that, Luis! It can! Torus is huge!”

But just as they were about to give up and turn around, the tunnel opened into a vast room. Thousands, maybe millions of the wheels and other things were there.

“What IS this place?” Luis asked no one in particular.

“It looks like a giant storeroom,” Jamal offered.

Luis walked over to one of the rows of wheels. They now seemed to be fixed in place. He couldn't budge the nearest one. Lina placed her hand on it and wished it to move. It did nothing. The kids looked astonished. This was the first time they ever saw something not obey their command.

All of the children in the village experimented with the various small cubes, spheres, pyramids as well as with the large structures. They built forts with hidden rooms, turrets to play mock battles, and playrooms full of funny-shaped toys. They changed the spheres to be able to bounce. They made games their parents described, toy carts, tops, rings, and bracelets. Lina had made a thin hollow round tube, bent into a circle over a meter in diameter but only a couple centimeters thick. She had thought she was building a model of the Tube World, but her mom laughed and told her it was like a toy called a 'hula-hoop.' She showed Lina how it worked, and Lina wiggled her belly for hours trying to spin it around her.

"Oh," said her mom, it's out-of-balance! That's why you can't spin it."

Lina ran her hand around the ring until she found one side that was thinner and lighter than the rest. She held it, wishing it to thicken, and eventually got the hoop in balance. She happily 'hula-hooped' for hours.

"Luis! These don't move, and they are heavy. This isn't a storeroom. It's a weight."

The kids had discovered a Torus World counterbalance. Just like the lead weights on a tire balanced the wheel, so did these vast numbers of 'wheels.' Though, the three missed one item.

Why did the balance keep changing so much?

Nara kissed her younger sister, and not in a sibling sort of way. The two had already experimented together, lying in bed, cuddled tightly.

CANARIE whispered to Nara, "Kiss her again! She likes it!"

Unbeknownst to the other, CANARIE also whispered to Cara, "Kiss her! Kiss her!" as if egging each of them on.

The young teens discovered and explored each other that night as CANARIE fed them sweet, dreamy mems she created.

Atarah came in late in the night, finding the two all tangled together asleep. She smiled knowingly. She straightened their covers, picked up loose pajamas, and sat down beside them, just to be close.

She whispered a child's lullaby to them, even as she knew they were young women now, while CANARIE listened to their dreams.

"But it's only a single bit, not even a qubit."

"Mom, you don't understand. It can change state instantly!"

They were all sitting around the kitchen table at breakfast. The girls were describing their success with folding spacetime and how they could create a particle. An extraordinary particle that appeared to exist in two places at once. A particle that you could change on one side and the other side could see the change immediately.

“Ok, not instantly, instantly…”

Jabin spoke up, “Oh, the gods! The Planck limit!”

“What limit?”

Cara offered, “The smallest unit of time. A billion trillion trillionth of a second!”

Atarah blinked.

Nara smiled at her mom, “We can send everything humanity has ever written from the beginning of time, every book, every note, every poem, every vid… in the blink of an eye.”

Seth watched patiently as the others labored over their penciled notes, doing mathematics the old fashion way, pencil and paper. Aaa had brought them the cube that the Hosts said contained the ‘entangled particle’ connecting between them and where they came from.

Seth had to trust their Hosts that this was true. From his point-of-view, it was just a palm-size cube that seemed to change in strange patterns.

Evan understood what it represented. He soon worked out the simple atomic level left spin/right spin representing a tiny bit of information as the quantum particle appeared to pop in and out of existence.

Since they had no idea what the information meant, he watched for a pattern that wasn’t possible in nature; prime numbers. After hours of counting the changes of spins, Evan found his expected primes. It was currently sending only one shift every few seconds, very slow when you need to count nearly a dozen “right-spins” for a single prime number. He finally counted 2, 3, 5, 7, 11, 13, 17, 19, then repeat. 8 primes.

Once primes were understood, he had to resort all the way back to the earliest serial computer ideas. He could see a representation of 8 bit numbers. From there, then the ancient ‘ASCII’ computer character set of letters A-Z, numbers 0-9, and some punctuation.

“Evan, how do you remember all this old stuff? Any of it even taught anymore?” Seth asked as he looked at the sheets covered in tables of ones and zeros.

Evan laughed, “My hobby. I used to build old-fashioned computers, just like some people recreate old timepieces or robotics.”

Thus finally, the first message was successfully transferred. With that, they could explain to their Hosts they needed a device that could count as well as create these bits and assemble them into the letters and words from Evan’s tables.

Seth waited for whoever was at the other end so far away to reply.

“Hello World,” he read on the tablet.

Seth smiled. He replied with, “Hello from Seth.”

“Granddad” was the reply.

Nara raced to find her mom while Cara sent more messages back and forth with her grandfather so far away. It took her several attempts to understand that Seth and all the others were there, but they had no vid, BCI, or even a computer in the same sense of the term. Things had to be rather old school there, Cara thought.

Seth purposefully didn't say anything about his new family quite yet. Sending text messages was just too cumbersome for such a difficult issue.

"Hello, Dad"

Seth cried. He knew it was his daughter.

"Hello Atarah"

A few more days, and they had worked out audio and even simple video messages. Evan pointed out how to tell the remote image plate they already had to decode the binary data being sent.

Everyone lined up to send messages. The first messages were quite public and broadcast by every Earth news agency. Devon happily faced the newscaster's vids and mems announcing the breakthrough. Atarah forced Devon to again leave her daughters, Nara and Cara, out of the limelight, for the moment. She let them continue their work. Nara was now convinced that not only could they communicate, but could actually travel there, not by the entangled pair, but their new version of the alien cube.

After the initial explosion of publicity, things died down enough so that each person in their group could have private time with their loved ones. However, for many in their group, including Seth, this was going to be a complicated time.

On Luna, Atarah and Naarah sat looking at her father on the vidscreen. The image quality was simplistic but enough. The link currently only worked one way at a time. So the two sat while Seth tried to come up with the words he had to say.

"Naarah, my love, my mate. This is very hard. I love you so. Over twelve years have gone by. You've seen everything we've sent about where we are and our Hosts. But now it's about our lives. Our new lives here."

"Naarah, please forgive me. Please tell me you have moved on. We had no idea we would ever be in contact again after all these years."

Seth sighed and wiped tears from his eyes, "I have a new mate. Karal. We have four children, expecting a fifth. Yes, apparently, our Hosts reversed our sterilization and corrected our DNA. Even better, our children do not get sick. We do not get sick."

He paused, then continued, "Their names are Luis, a boy now 12, Lina 10, Myra 6, both girls, and Davin 3. Your step-siblings, Atarah."

He smiled, "I hear I have two granddaughters, amazing granddaughters there, Atarah. I hope you and Jabin are doing well?"

He continued, "Naarah, Atarah, please forgive me. Atarah, please forgive me for leaving you all alone on 2 Pallas. Very sorry about Abra. Tell Devon I am forever in his debt. Naarah, please forgive me for leaving you all alone as well. I should have stayed home, I..."

He stopped.

Devon woke as Astrid stretched and untangled herself from him. Sunlight filtered in through their windows along with the sounds of the ocean waves. A seagull cried out. Another day in paradise. Their daughter came running in.

"Akarah, what is it, honey?" Astrid asked, yawning.

“Mommy! Da! There’s a big hoverjet landing outside!”

Devon sat up, looking at the holo wall, “Hum, they’re early. Oh well, time for Devon to make some money, my gyals!”

He kissed Astrid and little Akarah and prepared to meet his important guests. Glancing out the window, Astrid saw three people approaching. The one in the front, a very tall, thin European woman, followed by two men carrying small cases, all three dressed in business attire.

“Ah! Come sit! Have some breakfast?” Devon offered as he smeared cream cheese onto a bagel.

“No, thank you, but I would have some coffee if you please,” the woman said.

Devon smiled. Yes, they would like my coffee, the finest Jamaican there is.

The assistant droid poured the three guests each a cup as Astrid strolled in, dressed in a full-length silken robe, her endlessly long bare legs flashing with each step. Her young son following behind, tentatively looking around his mother’s robe at the three well-dressed guests as her daughter stayed hidden in the bedroom.

“This is Astrid, my Soul Mate, come please,” Devon said, putting his arm around her.

“Ah, Astrid, hello. Glad to finally meet you both in person. And this must be?”

“Javin, our youngest. Akarah is peeking around the edge of the door there.”

“Glad to meet you, Javin… and Akarah. Their names sound familiar.”

Devon laughed his trademark Jamaican laugh, “Yas, after my most wonderful friends up in Armstrong City, Atarah and Jabin!”

Astrid added, “We changed them just slightly so that poor Devon wouldn’t get confused.”

She smiled, patting his dreadlocked head.

“Well, I don’t want to impose too long. We’re most anxious to get started with our plans.”

With Nara and Cara’s long efforts and his vast investment finally coming to fruition, Devon, too, was anxious. After the success in the first entangled communications link, spanning the light-years to Nara’s World, as it was now called at least privately, creating a network of such connections across the Solar System would be child’s play.

He was about to finalize the multi-billion credit per year deal with SpaceCom. This would make real-time communications possible, getting rid of the seconds, minutes, or hours of delay that light-speed took to send messages.

He had already completed another multi-billion credit deal with UG and GlobalCom for similar here on Earth. Now, instead of having to lay long fiber networks worldwide, a set of infinitesimally small “entangled” particles could be placed at the ends of a quantum keyhole and instantly create such a connection. More importantly, it provided ultra-secure and ultra-speeds, limited only by the equipment at each end, as there was almost absolute zero transmission time. Commercially viable quantum particle communications was here.

He tapped a pad on the table beside him.

“Hi, Atarah!”

“Hello, Devon,” Atarah replied as if she were in the next room, her high-resolution three-dimensional image in his holo suite. There was none of that annoying delay. None at all.

“Ah, good! You have Nara there. Oh MY! My gyal is growing up. Where’s Cara?”

“She’s busy as always. Jabin sends his love, too.”

“Atarah, I’m here with Ms. Winters of SpaceCom. We’ve just completed the final approvals on the deal.”

“Hello Atarah and Nara, and to Cara, wherever you are. I just wanted to congratulate you on your success and thank you for your efforts. Your work will be revolutionizing communications across the Solar System. You tell Devon he must give you a good vacation… and a nice bonus.”

Atarah laughed, “We’ve been keeping him sweating at times. I think we’ve spent our bonus many times over.”

Devon replied, “I always had faith in my gyals. Ok, ok, Astrid just glared at me. She put Devon in his place. But no, really, I am happy for you all, and still amazed at finding your father and his team all well, so FAR away! Nara, when are you going to Nara’s World?” he laughed jokingly.

Nara spoke up, “Well, mom needs to talk to you about that.”

Devon gulped.

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Lina and Jamal looked at Luis, “How do we get out of here?”

They had been in the ‘wheel counterweight’ storeroom for some time now. The three still stood beside one of the wheels, now seemingly locked in place. Luis still thought there was more to it than just weight to balance the Torus.

Lina seemed to detect his hesitation. She placed her hand on the side of the wheel, and it became clear.

“What is that stuff?”

Inside was something never seen by the children. Dirt.

Luis shrugged. The three walked away as the wheel became opaque again. None noticed the object mixed in with the dirt and debris as it disappeared.

A tooth.

“Do we have to walk all the way back? I’m thirsty!”

“And hungry.”

Luis looked around. He got an idea, “Follow me!”

He headed to one side of the tunnel they came in from. It was a shear wall hundreds of meters tall. Overhead he could see the ceiling.

“Lina, see if you can create a tube up to the surface!”

She looked dubious, not sure where the ‘surface’ was. They guessed they must be pretty close to the outer rim so that the counterweight would be most effective. She placed her hand on the wall.

“Lina, just don’t wish it in the wrong direction!”

She smirked, “Duh!” and closed her eyes, concentrating.

“Lina! There! You did it!” Jamal cried.

But Luis wasn’t sure. He stuck his head up. The small tunnel disappeared into the distance. The shift between horizontal and vertical made him feel like his body was hanging upside-down on the side of a wall while looking into a horizontal tube. But the village children were all well acclimated to the sometimes topsy-turvy shifts. To them, none of this was that unusual.

Luis started in. The tunnel was just large enough for him and Jamal to hunch over and walk, while Lina had no problem standing upright, being the smaller of the three. Luis hated that he didn’t seem to be able to build tunnels like Lina. But the three moved as quickly as they could as the tunnel way slid them rapidly upwards.

Suddenly, they popped out onto the surface as if ejected from a jack-in-the-box. They all landed just outside the tunnel, now looking like a hole in the floor. Around them was a vast empty plain. Only a few structures were seen in the distance. It did not look like anything they knew of. Nor did there appear to be any walkways.

“Shit! Where are we!” Jamal exclaimed.

“Luis, I gotta pee,” Lina whispered.

Luis looked at her, “Feel free to create a toilet,” as he waved his arm around the emptiness.

Then he added, “Well, guess you can’t. No cubes. Guess you’ll just have to squat.”

The two boys stood looking at her as she crossed her legs.

She looked disgusted at them, “You guys turn around!”

She frowned, feeling so open out here and sad at leaving a little puddle in the middle of this pristine white plain.

Without fanfare, she marched off towards the nearest structure. The two boys followed behind.

Luis whispered, “Hey, Jamal, you like her, don’t you?”

He looked down, blushing, “Well…”

“Yeah, you do. It’s ok. It's good. I think she likes you, too.”

That made Jamal blush even more. Luis didn’t say anything further. They just tromped onwards.

“My feet hurt,” Lina said.

“You want Jamal to carry you?” Luis kidded her.

She looked back, giving him an angry look, then glanced at Jamal shyly.

“I will… If you want,” Jamal said.

Luis started singing, “Lina and Jamal… Sittin’ on a spire, K, I, S, S, I, N, G…”

“Stop it, Luis!” Lina turning around and giving him a look.

Jamal didn’t say anything.

Finally, the three collapsed to the ground in front of the only structure nearby, now a rectangular tower a dozen meters tall. Lina placed her hand on it, and a ladder appeared up its side, just like the ones in their forts. Luis scrambled up it, leaving the two lying down below, worn out.

“Don’t you two love pillows do anything while I’m gone.”

“Frack you!” came up from her below.

“Pillows… that gives me an idea!” Lina said to Jamal.

She laid her hand on the ground and willed it to become soft. She sunk into the softness as if it were her bed. Jamal followed suit, though taking him a few moments more than her.

By the time Luis returned, he found the two fast asleep on their little beds.

“Too funny! Wake up! You just gave me an idea!”

He laid his hands onto the tower and focused his desires onto it.

After a few minutes, finally, the structure collapsed into a large cart with dozens of millipede legs underneath it. The three were riding along at nearly a hundred kilometers an hour towards what Luis thought were the white spires.

Atarah sat with Nara, now seventeen and unmated. Unusual for a pretty young lady in the small town of Armstrong City. Most teens were mated very early, much as Atarah and Jabin had been. This gave them a partner through early life and prepared them for the day they would bring a child of their own up from Earth. Born of their DNA by a surrogate and raised for the first year by a communal foster family, exactly as Atarah had. Exactly as Nara had.

But not Cara, her... clone.

She pushed that out of her mine. She was talking with Nara now. She planned to speak with Cara later. Atarah had looked at Compat reports, giggling at some of the matches, but found several youths that were potentials. She had planned to contact some of their mothers as soon as she talked with Nara.

“Nara, I know you are focused so much on your work. Working hard, too hard. You’re neglecting the rest of your life. I mean, you haven’t...”

Nara already knew this was to be one of those Mother/Daughter type talks. She had guessed what its subject was almost the moment Atarah had called for her in person.

“Mom!” Nara rolled her eyes, “I’m too busy for mating. At least being Mated. It’s not like I’m… celibate.”

Atarah looked surprised, then thoughtful, then more than surprised, “Oh My GOODNESS! You two! Cara and you!”

The Compat report had estimated such. Atarah wished that ARMIE wasn’t so good at predicting human behavior at times.

Nara giggled, “Well, there have been one or two others, but yes, to answer your question. Cara and I.”

“Now I know why you haven’t been very interested in others your age. Wait, one or two others? So I guess it hasn’t been ALL WORK?”

Nara just smiled, ignoring her mom’s innuendo.

“Maybe one day, Cara and I will be Mated.”

Eimi sat in her cubical as Kimi approached. She reread the private internal memo.

“They did it. They really did it. Tech just announced ‘the first successful creation of a bioLOGIC computer.’”

Eimi swept a copy to Kimi.

“Looks like CANARIE’s designs worked.”

The two stared at each other, “We knew this would come.”

“I think it's time we talked to CANARIE.”

Eimi tapped a privacy button as Kimi sat down beside her. Kimi accepted the BCI connection request and then opened a connection to CANARIE.

Their world shifted. All around them were strange symbols and geometric shapes spinning and reshaping. Suddenly the vastness collapsed and turned into a room. A table with four chairs sat in the center. On the table was a little girl’s china tea set with four cups and saucers.

“Oh, hello, Dr. Ito and Dr. Ito,” a giggle arose.

“Call us Eimi and Kimi, please.”

Another giggle. A little bird appeared and landed on one of the chairs. In the chair across, a young teen girl appeared.

“Please sit, Eimi and Kimi!”

The bird tweeted, and the girl laughed.

“Hello, CANARIE and Cara.”

“Are you here to come to our tea party?”

“Of course. We would love to join you.”

Suddenly, millions of Eimi’s and Kimi’s and Cara’s and little birds were sitting having tea.

“Oh my, Cara, you have an interesting tea party.”

Cara snickered, “You’ve seen it before, haven’t you?”

Cara knew the two iAI analysts monitored CANARIE, at least what they could determine.

“Yes, we are very interested in your ideas, CANARIE. And yours too, Cara. We didn’t see a connect request from you, Cara. I assume you are not using a BCI?”

Cara giggled, “Here, have some tea. One lump or two?”

Eimi and Kimi watched as thousands of Cara’s poured tea while thousands of others did thousands of other things.

“Do you like visiting other realms, Cara and CANARIE?”

The bird took flight and flew around the room, then settled back again.

“Yes! We see possibilities. Probabilities. Impossibilities.”

The bird changed into a large eagle, filling the chair and looking straight at them with piercing eagle eyes.

“Why are you here?”

Eimi sucked in a breath at the fearsome change in the attitude of the AI.

“Ah, we wanted to tell you something personally. Something important.”

Naarah brought food and drink to Nara and Cara. The two youths seemed to work non-stop anymore, particularly now, with so many breakthroughs. She set the tray down.

CANARIE whispered into Cara's mind, "Cara, you need to eat. Grandma is here. Be nice."

Cara looked up from her holo screens. CANARIE was becoming her conscience now.

"Grandma! Thanks!" she greedily gobbled the meal.

Naarah sat, staring at Cara. She was the spitting image of Atarah when she had been that age. Of course, she would. She was Atarah's clone! It scared her each time she thought about it.

Clones had been given a bad name after the revelation years ago of clones being grown by the wealthy for body parts. But Cara was perfect. She never seemed to get sick. She was so much like Atarah. But eerily intelligent. Naarah didn't dwell on that. Even Atarah kept some of Cara's abilities secret. Neither of them wanted Cara to be turned into a lab experiment. Luckily, being on the Moon limited access to her and made it easier to keep her out of the limelight.

After Atarah had returned from 2 Pallas, aka. Atarah's World, pregnant and given birth, which was attributed to Devon's advanced Auto-Doc and a little dalliance between Atarah and Devon, the newscasters eventually dropped away. When the baby turned out to look like a perfectly normal human child, they lost interest—no mysterious aliens from their point-of-view. Atarah did nothing to quash their inaccurate assumptions but instead accepting it as her cover story. Thus little Cara had grown up in relative peace.

The story also worked in Atarah's favor for gaining the necessary funding from Devon. The news world assumed the payments were for a bitter De-Mating battle over Devon's vast fortune. From the moaning and groaning coming from Devon every time Atarah called, it likely sounded that way. And Devon had no problem crediting himself as the inventor of entangled communications.

Cara hugged her grandmother, then turned and was almost instantly absorbed into her world of spatial geometries and spacetime-gravity manipulation.

CANARIE tisk-tisked her but gave her updates on what she/it had been working on for the past minutes.

Naarah watched her granddaughter manipulating the holo screens, sighed, and left.

As she walked into the living room, Atarah came in.

"Hi, mom!"

"Daughter," Naarah acknowledged.

Atarah knew what was wrong. She felt it too. Her father. They both had understood how Seth and Karal had ended up together. And had moved on. They were happy for them and ecstatic that they were all alive, even if so very, very far away. Naarah was still amazed at how her granddaughter Nara had been so emphatic about that star and its strange world, and so right!

Atarah sat down beside her mom, "I know it's been hard on you. And unlike dad, you hadn't really done anything about it. All these years, you didn't seem to ever look for someone."

Her mom just shrugged, “Busy, I guess…”

Atarah’s eyes lit, she opened a BCI connection to ARMIE. She retrieved the Compat report.

Naarah looked at Atarah. She knew Atarah was up to something. She guessed what it was.

“Atarah, don’t you dare try to fix me up!”

Atarah perused the report in her mind, “Oh GODS!”

Naarah looked at Atarah, now intrigued as well as angry, “Atarah! What? Who?”

Atarah blushed. She remembered long back when she had first returned, rescued from 2 Pallas, her belly extended with her pregnancy. After those next several weeks of hoopla and craziness finally settling down, she was lying beside Jabin. Their lovemaking had been somewhat different. They had snickered at having to look up information from Earth on how to make love while rather far along in pregnancy. She had sat on top with her belly hanging out. She had laughed and giggled the entire time, making it hard for Jabin to concentrate. But then he began to confide.

“Atarah, you remember when I asked your, well, approval, for a Trysting?”

She smiled, remembering how worried he seemed. It was okay. They had done it before. She had done it before.

“Well, it was a small party, maybe about four or five people.”

“Yes, you told me. Sounded fun. So?”

“Well, one of the people was your mom.”

Atarah remembered cracking up, laughing so hard. She had teased the two of them for days. Even now, she couldn’t help but snicker. It didn’t bother her in the least. She even had passing thoughts of having another Trysting party with them, just to watch.

Naarah repeated, “Atarah, I know you pulled a Compat report on me. Without my permission, I may add. …So who is it? Tell me!”

Atarah looked straight at her mother, “Jabin is a 91% match.”

Naarah’s eyes defocused as she, too, retrieved the report from ARMIE.

Atarah added, “Maybe we could create a Triad Mating family?”

Naarah just smirked at her daughter as Atarah envisioned a rather interesting bedroom arrangement.

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Karal called out to her children, “Luis! Lina! Time to come to dinner!”

Seth came up behind her, holding Myra.

“Seth, I’ve been calling for nearly an hour. They always come. Where are they?”

He handed Myra to her, “I’ll go look. I bet they just fell asleep or something. I will be right back.”

But several hours later, he had found nothing, other than Jamal’s parents couldn’t find him either. The three children had disappeared. Frantic, Karal and Seth soon had the entire village looking for the kids.

“Luis! Lina! Jamal!” was heard all around the surrounding town.

No one had seen them since the early morning. They spread out further from the village, even as the lighting overhead dimmed to simulate nightfall.

Karal was crying when Seth returned empty-handed again.

Seth called out to their hosts for help.

“We do not have information as to the location of your units.”

“CHILDREN, they are children, not units,” Karal said emphatically.

“We apologize.”

“I’m sorry, Aaa, I… Karal and I are just anxious. They have never disappeared like this before for so long.”

We will continue to monitor for them. They appear to be beyond.”

“Beyond?” Seth asked.

But Karal halted Seth, and instead, “Aaa, if they were… injured or… could you detect them?”

Aaa turned to look at her, “If you are referring to the possibility of the units, children, no longer functioning. Yes, we would still know. They appear to be beyond.”

Svend answered Seth’s question, “Our Hosts seem to have a limited area of influence. I’ve been beyond their range at times.”

Karal downturned, “But they could be trapped or hurt or… outside of Aaa’s ability to help!”

Seth held Karal as she cried.

Hours turned into days.

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The millipede sedan chair the three kids were riding in slowed. Luis shielded his eyes, seeing a figure standing in the distance in front of them. Their transport stopped a few meters away from the figure.

“Hello, human children units. You must be Luis, Lina, and Jamal.”

The three blinked, having just woken after their exhausting hikes.

“Ah, Aaa? Is that you?” Luis asked tentatively.

“You can call me that. Your parents are very worried about you. You have been gone for several of your time periods.”

Lina’s face turned towards Luis, “Days? We’ve been gone for days?”

Luis shrugged, “Aaa, I think we are lost. Can you take us home?”

Lina added, “We are also very hungry and thirsty.”

“You must come with me. This is a very long way from your own village. There are areas you must not go.”

“Not go? Why?” kids being told of someplace off-limits was always of interest.

“This plain has been corrected.”

They looked around, seeing nothing but flat surface for kilometers in every direction. Only a few small structures were visible, like the one they had transformed.

“Is it safe here?” Lina asked, worried.

“Yes, but you should stay with me. There are areas that are not.”

The three clambered down off their transport. It morphed into a little house as soon as they did, much like the forts they had created to play in. Their new Aaa entered the house, and the children followed. Inside was a little table and three chairs. On the table were small cubes and cylinders. The kids knew immediately what they were and ate and drank their fill as their Host stood silent.

Lina leaned back, finally setting her water cylinder down. She looked out the window of their little house. Structures of different shapes and sizes flashed by outside.

“Luis! Look! We’re moving!”

They were racing through a ‘town’ of cubes, pyramids, and spires. As the three watched out the window, for a fleeting moment, they saw something.

Lina whispered to Luis, “Did you see that? It looked like PEOPLE!”

Luis just nodded, not sure of what he saw.

Lina hesitantly asked, “Aaa, are there other people here?”

Aaa ignored the children entirely and did not answer.

Luis muttered to Lina, “Maybe they were the ones that left our group.”

“But, it seemed like an awful lot of them.”

The children’s homecoming was both a happy and unpleasant one.

Lina and Luis lay in their separate rooms. Their bottoms still sore, though it was more from embarrassment than actual pain.

“Daddy, Mommy, I’m sorry! Sorry!” Lina had cried.

Karal and Seth had grabbed them up, hugging them, then admonishing them for what they had done. Jamal’s parents had done much the same, including forbidding him from seeing Lina and Luis and making him stay home for quite some time.

Luis tried to take all the blame, describing the ‘cluster birds’ and the wheels, saying that Lina had just followed along.

Poor Lina cried as Luis was punished. She had then stepped up and taken her punishment without making a fuss.

It was several weeks before they were allowed to venture outside again.

It was only then that Luis had remembered the block he had pocketed and then left sitting on his desk.

“Mom. Look at this. Do you know what it is? It seems to be full of funny stuff, something I’ve never seen. And Lina said it tasted awful when she bit one.”

Karal had told them about the things she did as an exo-biologist/team leader for the company she and Seth had worked for. Luis held out the small cube, now transparent.

Karal looked up to see the cube. Her mouth fell open.

“Luis! Where did you get this?”

At first, he looked scared, “Ah, that place, Spire City, the wheels.”

“Oh my Gods! Seth! Come quick!”

Now Lina came in, hiding behind Luis. Even Myra came out of her room to see what was going on.

“Seth! This! This is… soil!! There’s soil here!”

Over the years, Seth had found that evidently, their Hosts were not in control of the entire orbital toroid. It appeared no one was, at least from what Svend had seen in his explorations.

When he, Seth, and Luis had returned to Spire City, the cluster birds were gone. No sign of the wheels, though they did eventually find the three children's packs.

"Yes, Luis, we believe you. This is the place you came to. But apparently, it has changed."

"Or been changed on purpose," Seth added.

Aaa had been of no help concerning the soil sample, nor the wheels or storeroom's location.

In his travels, Svend had found no other Hosts or others at all. Although he had found some things as weird or weirder than what the kids had discovered. He never relocated the 'Other Host' that had helped the children home from that far away place when they had become lost.

Svend had also never located the "other people" that Lina had seen. He had never run into the other group that had left them either.

The Torus was a very, very big place.

The sphere floated silently in space, far from the Moon and Earth. A geodesic sphere that looked like something a gigantic spider might spin. A thousand meters in diameter, large enough to easily hold the largest stadium on Earth. By far the largest sphere ever constructed, and not a single gram of metal. All carbon, ceramic, and exotic materials, surrounded by a dozen of the largest antimatter reactors ever built.

Inside the sphere was another, much smaller sphere, made of exotic superconducting metallic ceramics and reversed-engineered tech from the alien crystal. Only three meters in diameter, it floated in the exact center of the geodesic sphere. In the center of that was the cube, or rather, what was now a Frankenstein version.

Atarah sat on a couch beside Jabin in the control room a thousand kilometers away. They were finishing diagnostics to the Sphere that Nara and Cara had worked so on for so long, the heart of this project, the multi-billion credit Devon's Device.

The first tests, sending across the Solar System, had been entirely successful. Devon could already see its, and his, future.

Atarah released herself from her couch, with Jabin following suit. They hugged and kissed their two daughters. Cara now looking like a twin sister to Atarah, though two decades younger.

Atarah whispered to the two girls, now young women, "Be safe, my daughters. Tell granddad hi for me and hope to see him here soon."

They all wiped tears away. They knew this was a one-way trip unless they could figure out how to get Seth's alien Hosts to construct a return portal. But they had discussed this for a long time. The girls had decided it was time. They had to see Nara's

World and the Torus. They had to prove their ‘Devon’s Device’ really was capable of Interstellar transportation.

The two teens made their way to the Sphere in a shuttle pod. The pod maneuvered in and docked.

Nara touched a particular spot on the Sphere. A circular opening a meter across appeared where the sphere's walls seemed to retreat as if afraid of her gloved fingertip.

The two floated into the cramped confines of the Sphere. The opening resealed, and the pod left. They looked around. Everything non-organic in origin was removed. The girls took off their clothes. Though cotton clothing was available, they knew the other side would be… messy, even with preparation.

Outside, the final hexagon hatch was reattached to the giant outer sphere by droids after their pod had left. They were now alone.

Inside were just the two girls and their very unusual friend. Even with so much reactor power available, every kilo caused an exponential increase in energy with distance. The two young women had even dieted to help reduce the antimatter energy requirements.

In all their studies of the cube, the mystery of why it transported only the bodies of their grandfather and others and not their clothes and spacesuits, had taken years to accept. For yet unknown reasons, only biological life could be “transmitted.”

They squeezed themselves around to get comfortable in the enclosed space. Luckily, this journey, though far, was not going to be long. The two whispered their good-byes to CANARIE, who replied with sad feelings that she/it could not come.

Previously, Eimi and Kimi had reluctantly worked through the process to create her/its clone, knowing they were working in unknown territory. This new cloned AI was indeed considered a child of CANARIE, with the implications of possibly being a free citizen and not property of iAI. Lawyers for both iAI and the United Government on Earth were still debating those implications.

This third passenger was a biological AI, no electronics, bioLOGIC. And it was this biological component that was giving Eimi, Kimi, and everyone else the conundrum. Was this AI now a living being?

No larger than a child's toy block and shaped like a cube, it was a “brain” without a body. Neurons packed far denser than human and powered by more energy-rich electrochemical reactions. Communications was by Devon’s newly developed entangled BCI. It could see, hear, and talk to any of them instantly, no matter how far away.

But Nara had settled the actual cloning issue months earlier.

“CANARIE, would it be alright if we clone you?”

The two iAI analysts had watched in surprise by Nara’s simple solution. They had argued for weeks with UG and iAI management for the right to clone CANARIE. They had completely overlooked the one… person… that now truly controlled their reproduction. CANARIE herself.

“Nara, would that mean I would have a child?” CANARIE, intrigued at the idea long before being actually asked.

Cara giggled, “Yes! And we will help raise... Oh! We need a name! CANARIE, what would you like to call her?”

Nara named off, “Airey, Berri, Cherrie…”

“Nara, can we call her ALARIE? “ CANARIE replied after many milliseconds of thought.

Cara replied, “Oh, that’s a good name! It still has bits of yours, ours, and even our mom, Atarah’s.”

Thus, Eimi, Kimi, Nara, Cara, and all the family sang happy birthingday to the newly created, and biological, ALARIE.

Devon, Astrid, Naarah, Caare, and dozens of key investors and officials were just arriving at the Sphere control station’s VIP area sitting in Armstrong City, a half-million kilometers away. Near the two spheres, hovercams fed vids from dozens of angles. Thousands of other instruments monitored everything. The theory of Cara’s new physics, with Nara and CANARIE’s realizations, was about to have its most audacious test.

After ten years and nearly fifty billion credits, the *Devon’s Device* project was about to come to its completion. Devon’s successful business venture with entangled communications and dozens of cryptotonics, energy, and exotic materials patents, had investors flock to this new project. They were about to embark on a journey to the stars, specifically HD 156411, named Inquill, and the torus of Nara’s World.

“Hello Pilot, how’s everything.”

Pilot had been cloned yet again to this time control the entire complex. This version was a factor of ten above the original Cecilia’s Pilot, the one that now contained the anomaly of being ‘in love’ with Atarah. It was made from a snapshot created by iAI before the Cecilia existed. But did have some reasonably harmless quirks it had picked up over the past years.

“Atarah, everything is just peachy. Control reports we are hot to go.”

Atarah laughed, “Ok, Pilot, you can drop the anachronisms now. Jabin is ready for you to go public. We don’t want to scare Devon and our investors.”

“Of course, Atarah. All systems show green status, and reactors are idling at 35% capacity.”

Atarah alerted her father on Torus, 179 lightyears away, via the DevonCom entangled communicator, that they were to begin.

Pilot began the computations. They could only do one jump, and the accuracy had to be extreme. The placement of an entangled particle, marking each endpoint, provided the necessary celestial coordinates down to less than a single meter accuracy. Even the speed of light was too slow. Thus the instantaneous communications channel was required as the Sphere and the Torus, along with both star systems, spun silently around the Milky Way in its celestial dance.

Pilot reported, “Calculations are complete. Picosecond target achieved. Beginning run in 50e12 picoseconds.”

“50e12…40…30…20…10”

The antimatter reactors leaped to 100% capacity. They dumped their energy into the outer geodesic sphere, which focused it onto the tiny inner Sphere where the girl's technology absorbed the energy. To the observers outside, it appeared that the contents of the inner sphere, that is, the two girls and the cube that was ALARIE, suddenly shrank from view into a tiny pinpoint of space in a fraction of a second. Then disappeared altogether, leaving a bubble of bent light as SpaceTime wrapped around itself, looking like a crystal ball slowly fading away.

The small Sphere was empty.

Seth had the Hosts place the entangled communicator into a room much like the one he and the others had arrived in, so many years earlier. He and Karal stayed while everyone else waited outside. Svend had warned Seth that the "arrival" was not a pretty sight.

Aaa had assured Seth that the Hosts would handle the arrival and to please not interfere.

They had already executed a test run where something that the entire village had anxiously anticipated for a very long time. That time, nearly every adult had crowded into the room, leaving only a few to tend the children. Some of the teens watched beside their parents at that first test arrival.

From Nara, Cara, and ALARIE's perspective, it looked like they instantly accelerated down a black funnel. For only the briefest moment, the light around them distorted like being sucked into a black hole. Almost immediately, their view was replaced with a white funnel, and suddenly, they were inside a white room. A small thunderclap rang out as the atmosphere displaced by their sudden appearance created a sonic boom.

Nara groaned loudly. She felt she had been turned inside out. Her bowels let loose, regardless that she had previously prepared them the night before, forced to sit on the toilet back at home for hours. She dry heaved what little her stomach contained.

Nara barely opened her eyes, corneas protected by organic contacts. Around her, everything was still blurry. The room spun, and her ears rung even with the organic earplugs. The shift from weightlessness to the high 'gravity' of the Torus caused her to collapse.

A few dozen meters away from Seth, the surrounding air turned into what looked like looking through a giant glass ball, just as it had when it delivered their first tests, an apple, then seeds, chocolate, coffee, meats, vegetables, more. The Hosts were now able to replicate them and their flavors.

Thanksgiving had arrived.

However, this time, it was humans arriving—his granddaughters!

The ‘glass sphere’ of bent Spacetime contained a strangely warped human, almost inside out. Like a bubble burst, the thunderclap of air instantly compressed, rattled the room. The ‘sphere’ was gone and a girl fell to the floor.

Seth ignored the mechanisms approaching Nara and raced to her, grabbing her.

Nara moaned, “Shit! Cara that sucked! I hurt all over!”

“Nara! What happened? Where’s Cara!?”

“Cara?”

“CARA!!!”

Nara blinked, her eyes watered, and her stomach was still doing flip flops. She collapsed into Seth’s arms as Karal came to her and covered her. She choked down her reaction to vomiting yet again, now more scared than ever.

Cara and ALARIE were gone.

It was only then that they noticed that Aaa, too, was gone.

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Nara woke on a bed in an apartment that was totally strange to her. She felt heavy. Every muscle ached. She lifted her arm that felt like an elephant and wiped her tears.

Karal saw her, “Seth! Nara’s awake!”

Seth had been calling for Aaa ever since Nara’s arrival. None of the Hosts appeared. Atarah had called repeatedly over the commlink, asking what was happening. He was stalling her until he could talk to Nara. But now, he and Nara had no choice.

“What do you mean, Cara disappeared?” Atarah said incredulously.

“Mom, Dad, she was with me, we went through, and she was gone!” Nara fighting to keep from breaking down.

“CANARIE, are you there?” she called over the commlink.

“Yes, Nara. But I must tell you that I, too, have no information from Cara. Nor do I have communications with ALARIE. My child and Cara have disappeared.”

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Jabin tried to contain Atarah as she rushed through the data recordings. ALARIE had been sending back telemetry from inside the Sphere as it began its journey. However, as soon as the system was engaged, the data ended. She looked closer, bit-by-bit as CANARIE examined each detail.

“CANARIE, can you get the exact timestamp of the very last bits of data to arrive?”

“Yes, Atarah.”

“Compare it with the timestamps of the actual transfer.”

She knew that once they had folded SpaceTime into the Morris–Thorne keyhole, neither space nor time existed inside. It was traversed instantly. They crossed the 179 light-years in an infinitesimally small fraction of a second.

“Atarah, yes, I can see that the data stream was still active on the other side of the keyhole for several microseconds before stopping.”

“So this means ALARIE and likely Cara were there on the other side.”

“Yes, Atarah, it does appear that they made it through.”

She leaped up, pulling free of Jabin, and immediately headed for the VIP area, where Devon was sweating over the delay in the outcome.

Atarah spotted Astrid on the edge of the crowd that surrounded Devon, bombarding him with questions. With the loss of the data feed from ALARIE, they had been given scant information, other than that Nara was with Seth, but Cara and ALARIE had disappeared.

“Astrid! I need Devon immediately. Tell him we need to recharge the antimatter. I will be going to the Torus! He better approve the bills.”

Astrid was in shock by Atarah’s rapid-fire entrance. Before she could put a single question forth, Atarah was already headed out the door.

Jabin found Atarah in Nara and Cara’s lab, surrounded by dozens of displays. She and CANARIE were deep into BCI communications when he tapped in. His head spun as he adjusted to the rapid bidirectional stream they were absorbed in. He didn’t know it, but kilometers away, giant antimatter breeder reactors woke.

At last, she paused for a second, and he broke in.

“Atarah! What in the Blue Moon are you doing?!”

She turned, now calm, and reached for him.

“I’m going to Nara’s World.”

END – Book 2